



STIC EIC 2100 Search Request Form

1557845

Today's Date: 6/6/2005

What date would you like to use to limit the search?

Priority Date: 4/7/2001 Other:

Name LESLIE WONG

AU 2167 Examiner # 78953

Room # 3B09 Phone 2-4126

Serial # 09/918,295

Format for Search Results (Circle One):

PAPER DISK EMAIL

Where have you searched so far?

USP DWPI EPO JPO ACM IBM TDB

IEEE INSPEC SPI Other

Is this a "Fast & Focused" Search Request? (Circle One) YES NO

A "Fast & Focused" Search is completed in 2-3 hours (maximum). The search must be on a very specific topic and meet certain criteria. The criteria are posted in EIC2100 and on the EIC2100 NPL Web Page at <http://ptoweb/patents/stic/stic-tc2100.htm>.

What is the topic, novelty, motivation, utility, or other specific details defining the desired focus of this search? Please include the concepts, synonyms, keywords, acronyms, definitions, strategies, and anything else that helps to describe the topic. Please attach a copy of the abstract, background, brief summary, pertinent claims and any citations of relevant art you have found.

Topic: Virtual hard Drive

Novelty: Virtual hard drive on an emulated Computer

* Write operations to the Virtual drive are made to the differencing drive and the differencing drive records the writes to the virtual hard drive and expand in size to accommodate the content of write operations to the virtual hard drive

See attached Search history

STIC Searcher Geoffrey St. Leger Phone 235410

Date picked up 6/8/5 Date Completed 6/8/5



File 347:JAPIO Nov 1976-2005/Feb(Updated 050606)

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File 350:Derwent WPIX 1963-2005/UD,UM &UP=200535

(c) 2005 Thomson Derwent

Set	Items	Description
S1	93503	EMULAT???? OR SIMULAT???? OR (VIRTUAL? OR GUEST) (2W) (PC? ? OR COMPUTER? ? OR SYSTEM? ? OR OS OR ENVIRONMENT)
S2	3245286	DRIVE OR DRIVES OR DISK? ? OR DISC? ? OR HARDDRIVE? ? OR HARDDISK? ? OR HARDDISC? ? OR STORE? ? OR STORAGE
S3	3214	(VIRTUAL OR EMULAT? OR SIMULAT? OR GUEST) (2W) S2
S4	6	DIFFERENCING(2W) (S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ? OR AREA)
S5	9124	(TEMPORARY OR TRANSIENT OR STAGING) (2W) (S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ? OR AREA)
S6	64045	(SECOND? OR 2ND OR SUBORDINATE? OR CHILD OR DIFFERENT OR SEPARATE) (2W) (S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ? OR AREA)
S7	1675	S1 AND S3
S8	66	S7 AND S4:S6
S9	701	(S1 OR S3) AND S4:S6
S10	238294	(WRIT??? OR WRITTEN OR CHANG??? OR DELET???? OR ERAS???? OR UPDAT??? OR EDIT??? OR MODIF???? OR MODIFICATION? ? OR ALTER??? OR ALTERATION? ?) (10N) (S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ? OR AREA)
S11	122	S9 AND S10
S12	35	S11 NOT (STORE OR STORAGE)
S13	15	S3 AND S5
S14	29950	S2 (7N) (SYNC??? OR SYNCHRONIZ?????? OR SYNCHRONIS?????? OR RECONCIL? OR CONFORM? OR MAP????)
S15	14	S11 AND S14
S16	935	RAM() (DISK OR DRIVE? ?)
S17	10	S16 (10N) (SYNC??? OR SYNCHRONIZ?????? OR SYNCHRONIS?????? OR RECONCIL? OR CONFORM? OR MAP????)

15/5/1 (Item 1 from file: 347)
DIALOG(R)File 347:JAPIO
(c) 2005 JPO & JAPIO. All rts. reserv.

06898240 **Image available**
DATA STORAGE SYSTEM AND DATA MANAGING METHOD FOR THE SAME

PUB. NO.: 2001-125750 [JP 2001125750 A]
PUBLISHED: May 11, 2001 (20010511)
INVENTOR(s): ISHII TAKASHI
APPLICANT(s): TOSHIBA CORP
APPL. NO.: 11-309388 [JP 99309388]
FILED: October 29, 1999 (19991029)
INTL CLASS: G06F-003/06; G06F-012/00; G06F-012/16; G11B-019/02;
G11B-020/10

ABSTRACT

PROBLEM TO BE SOLVED: To provide a data storage system for dynamically controlling the throughput of a logically single **virtual data storage** device composed of physically **different** plural data **storage** devices.

SOLUTION: A dike subsystem 5 composes a **virtual disk** device by securing in a state of overlapping the same data area on plural magnetic disk devices 9 and when a **write** request to this **virtual disk** device is received, a **write** request command is inputted to a queue 8 of the magnetic disk device 9 with the minimum load. Besides, copy to the other magnetic disk device 9 is executed in the background. When a read request is received, a read request command is inputted to the queue 8 of the magnetic disk device 9, where effective data exist, with the minimum load. Then, by managing the number or the like of magnetic disk devices 9 composing of the **virtual disk** device while using a logical disk **map** 6, the throughput performance of the **virtual disk** device is dynamically controlled.

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15/5/2 (Item 2 from file: 347)
DIALOG(R)File 347:JAPIO
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06178433 **Image available**
SIMULATION METHOD FOR COMPUTER STORAGE DEVICE

PUB. NO.: 11-119982 [JP 11119982 A]
PUBLISHED: April 30, 1999 (19990430)
INVENTOR(s): BEELITZ ALAN E
APPLICANT(s): DELL USA LP
APPL. NO.: 10-200970 [JP 98200970]
FILED: July 15, 1998 (19980715)
PRIORITY: 947138 [US 947138], US (United States of America), October
08, 1997 (19971008)
INTL CLASS: G06F-009/06; G06F-009/445

ABSTRACT

PROBLEM TO BE SOLVED: To provide a system and a method for remapping a logic reference corresponding to a 1st storage device to a **2nd storage** device.

SOLUTION: A computer is provided with a processor for driving a software containing an operating code, a 1st storage device 16 which can be accessed by the processor and is divided into more than one domains while having the 1st domain in active state, and a **2nd storage** device which cannot be

accessed by the processor, the operating code is provided with the logic reference corresponding to the 2nd storage device and a table 42 for mapping the logic reference to the 2nd storage device, a reference change routine is provided for dynamically changing the logic reference corresponding to the 2nd domain of the 1st storage device 16 by changing the table 42, the table 42 is updated after the reference has been changed and in place of it, an arbitrary reference with respect to the 2nd storage device is generated, corresponding to the 2nd domain of the 1st storage device 16.

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15/5/3 (Item 3 from file: 347)
DIALOG(R)File 347:JAPIO
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05293717 **Image available**
CACHE MANAGEMENT DEVICE

PUB. NO.: 08-249217 [JP 8249217 A]
PUBLISHED: September 27, 1996 (19960927)
INVENTOR(s): KAWAMURA TOSHIKAZU
TSUCHIYA TAKEHIKO
WAKIZONO TATSUJI
TANAKA TATEJI
APPLICANT(s): TOSHIBA CORP [000307] (A Japanese Company or Corporation), JP
(Japan)
APPL. NO.: 07-055554 [JP 9555554]
FILED: March 15, 1995 (19950315)
INTL CLASS: [6] G06F-012/00
JAPIO CLASS: 45.2 (INFORMATION PROCESSING -- Memory Units)

ABSTRACT

PURPOSE: To provide a cache management device capable of mapping the page of a cache area to virtual storage space and being utilized for the fault restoration of a data base as well.

CONSTITUTION: This device is provided with a page management means 32 for managing data stored in the data base 31 by a logical page unit, the cache area 25 arranged in a nonvolatile area on a secondary storage device, a page storage means for storing the page received from the data base 31 in the cache area 25, a data base area 22 arranged in the virtual storage space, a mapping means 23 for making the page stored in the cache area 25 correspond to the free area of the data base area 22, a means for dissolving mapping corresponding to a storage request and making the changed page contents of the data base area 22 reflected in the cache area 25 and the page storage means for making the page updated in the

cache area 25 reflected in the data base 31.

15/5/4 (Item 4 from file: 347)
DIALOG(R)File 347:JAPIO
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02424040 **Image available**
NON-SHARED PATCHING SYSTEM FOR SHARED PROGRAM

PUB. NO.: 63-040940 [JP 63040940 A]
PUBLISHED: February 22, 1988 (19880222)
INVENTOR(s): MUROTANI YUJI
APPLICANT(s): NEC CORP [000423] (A Japanese Company or Corporation), JP
(Japan)
APPL. NO.: 61-184633 [JP 86184633]
FILED: August 05, 1986 (19860805)

INTL CLASS: [4] G06F-009/46; G06F-009/06; G06F-012/10
JAPIO CLASS: 45.1 (INFORMATION PROCESSING -- Arithmetic Sequence Units);
45.2 (INFORMATION PROCESSING -- Memory Units)
JOURNAL: Section: P, Section No. 731, Vol. 12, No. 253, Pg. 9, July
16, 1988 (19880716)

ABSTRACT

PURPOSE: To execute a patch change of a shared program, to only a specific task, by storing the **change** contents in an address in a program on a main **storage** device, at the time loading a page containing an address of the shared program, onto an intrinsic **virtual storage** area.

CONSTITUTION: First of all, a non-shared **virtual storage** area 21 for loading a shared program 5 is secured in an intrinsic **virtual storage** area 10 of a task 4. Subsequently, an address of a shared program store area 22 of the program 5 in a **secondary storage** device 6 is set to an external page table corresponding to the storage area 21. Simultaneously, by relocating a virtual address of the program 5 so as to be brought to addressing to the storage area 21, the storage area 22 in the device 6 is brought to **mapping** to the **storage** area 21. Thereafter, a real page RP1 of a main storage device 7 is allocated to the storage area 21 by a paging function, and a program text of the program 5 is page-loaded from the device 6. In such a case, the change contents are sent to the real page RP1 of the device 7 from a **change** contents **store** device 3.

15/5/5 (Item 1 from file: 350)

DIALOG(R)File 350:Derwent WPIX
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016080223 **Image available**

WPI Acc No: 2004-238084/200422

XRPX Acc No: N04-188786

Remote digital data transferring method, involves saving indication of write command as entry in queue file and sending a copy of data file to the server based on entries, where file is to be copied from data file on file system

Patent Assignee: GRUINTINE PUECHE INC (GRUI-N); ELDER K (ELDE-I); HEMMERS O (HEMM-I)

Inventor: ELDER K; HEMMERS O

Number of Countries: 100 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20040039889	A1	20040226	US 2002225103	A	20020820	200422 B
WO 200419214	A1	20040304	WO 2003US23333	A	20030725	200422
AU 2003256817	A1	20040311	AU 2003256817	A	20030725	200457

Priority Applications (No Type Date): US 2002225103 A 20020820

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
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US 20040039889	A1	19	G06F-012/16	
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WO 200419214	A1 E		G06F-012/16	
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Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW

Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

AU 2003256817 A1 G06F-012/16 Based on patent WO 200419214

Abstract (Basic): US 20040039889 A1

NOVELTY - The method involves receiving an indication of a **write** command to a data file on a file system on a server. The indication

is saved as an entry in a queue file (425) that stores entries of processed file system commands to the file system. A copy of the data file is sent to another server based on the entries in the queue file. The copied data file is to be copied from the data file on the file system.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a computer system.

USE - Used for transferring digital data through mirroring, backup and **synchronization** between local and geographically remote data **storage** facilities.

ADVANTAGE - The method allows to write themselves in a separate, volatile buffer system and hence does not require **temporary storage** of the physical data **disk**. The method provides remote data **synchronization** without special hardware configurations or need for an expensive high-speed network.

DESCRIPTION OF DRAWING(S) - The drawing shows a block diagram of a dynamically loadable mirroring module (DLMM).

Data transfer agent (250)

File operations request (410)

Queue file (425)

Virtual file system (430)

Real file system (440)

pp; 19 DwgNo 3/9

Title Terms: REMOTE; DIGITAL; DATA; TRANSFER; METHOD; SAVE; INDICATE; WRITING; COMMAND; ENTER; QUEUE; FILE; SEND; COPY; DATA; FILE; SERVE; BASED; ENTER; FILE; COPY; DATA; FILE; FILE; SYSTEM

Derwent Class: T01

International Patent Class (Main): G06F-012/16

File Segment: EPI

15/5/6 (Item 2 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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015597950 **Image available**

WPI Acc No: 2003-660105/200362

XRPX Acc No: N03-526395

Data backup and restoration method in e.g. laptop computer, involves reallocating primary virtual storage to include data stored in secondary virtual storage, by updating virtual storage map in response to save command

Patent Assignee: VOOM TECHNOLOGIES INC (VOOM-N); BIESSNER D W (BIES-I);

BIESSNER G R (BIES-I); CHECKY M T (CHEC-I)

Inventor: BIESSNER D W; BIESSNER G R; CHECKY M T

Number of Countries: 100 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030115432	A1	20030619	US 200120086	A	20011214	200362 B
WO 200352604	A1	20030626	WO 2002US40031	A	20021211	200362
AU 2002359710	A1	20030630	AU 2002359710	A	20021211	200420

Priority Applications (No Type Date): US 200120086 A 20011214

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

US 20030115432 A1 20 G06F-012/00

WO 200352604 A1 E G06F-012/16

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW

Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SI SK SL SZ TR TZ UG ZM ZW

Abstract (Basic): US 20030115432 A1

NOVELTY - A virtual storage map (VSM) is stored in a storage system (8) to allocate primary virtual storage (10A) and secondary virtual storage (10B) within the system. The VSM is updated when a save command is received, so as to reallocate the primary virtual storage to include data stored in the secondary virtual storage.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) data backup and restoration system; and

(2) data backup and restoration apparatus

USE - For backup and restoration of data in computing device such as handheld computer, laptop computer, desktop computer, super computer, web server, file server and database server.

ADVANTAGE - Enables quick backup and restoration of data within a computing device, by dynamically reallocating the virtual storage within the storage system.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of the data backup and restoration system.

data backup and restoration system (2)

processor (4)

controller (6)

storage system (8)

primary virtual storage (10A)

secondary virtual storage (10B)

pp; 20 DwgNo 1/14

Title Terms: DATA; RESTORATION; METHOD; COMPUTER; PRIMARY; VIRTUAL; STORAGE
; DATA; STORAGE; SECONDARY; VIRTUAL; STORAGE; UPDATE; VIRTUAL; STORAGE;
MAP; RESPOND; SAVE; COMMAND

Derwent Class: T01

International Patent Class (Main): G06F-012/00; G06F-012/16

International Patent Class (Additional): G06F-012/14

File Segment: EPI

15/5/7 (Item 3 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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015279489 **Image available**

WPI Acc No: 2003-340420/200332

Related WPI Acc No: 2003-362634

XRPX Acc No: N03-272270

Mass storage system controller apparatus for computer system, has file system containing command region processor that maps files of data storage system to mapped data regions, based on map command and map arguments

Patent Assignee: COMPUTER ASSOC THINK INC (COMP-N)

Inventor: BLADES J A; DEWEY M C; THOMPSON B A; VAN MAREN D J; WILSON J M

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6493811	B1	20021210	US 9872582	P	19980126	200332 B
			US 99233979	A	19990120	

Priority Applications (No Type Date): US 9872582 P 19980126; US 99233979 A 19990120

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6493811	B1		24	G06F-012/00	Provisional application US 9872582

Abstract (Basic): US 6493811 B1

NOVELTY - A file system (46) has a processor functioning as a

command region processor and as a mapped data region processor. A disk emulator (48) passes controller commands including a map command with map arguments to the processor. The command region processor responds to the map command and map arguments, and maps files of a data storage system to the mapped data regions.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

- (1) peripheral system controller;
- (2) file control operations and data transfer operations performing method;
- (3) computer program storage medium storing write /read access provision program; and
- (4) computer program product for performing file control operations and data transfer operations.

USE - Mass storage system controller apparatus for computers systems.

ADVANTAGE - Allows multiple computers with different operating systems to dynamically share data and storage at different storage speeds. Integrates new ideas and functionality without disruption of the existing behavior. Storage technology vendors can develop and support storage devices with vastly different characteristic with the same host integration. Also, allows capacity to be added seamlessly without the need to bring the system down for a long reconfiguration processes.

DESCRIPTION OF DRAWING(S) - The figure shows a mass storage system controller.

file system (46)
disk emulator (48)
pp; 24 DwgNo 1/12

Title Terms: MASS; STORAGE; SYSTEM; CONTROL; APPARATUS; COMPUTER; SYSTEM;
FILE; SYSTEM; CONTAIN; COMMAND; REGION; PROCESSOR; MAP; FILE; DATA;
STORAGE; SYSTEM; MAP; DATA; REGION; BASED; MAP; COMMAND; MAP; ARGUMENT
Derwent Class: T01; T03
International Patent Class (Main): G06F-012/00
File Segment: EPI

15/5/8 (Item 4 from file: 350)
DIALOG(R) File 350:Derwent WPIX
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015148487 **Image available**
WPI Acc No: 2003-209014/200320
XRPX Acc No: N03-166570

Virtual hard drive for computer system, has dynamically expanding file through which client computer performs content write operations to fixed size file

Patent Assignee: CONNECTIX CORP (CONN-N); CHAKRABORTY P (CHAK-I); GILES A (GILE-I); TRAUT E P (TRAU-I)

Inventor: CHAKRABORTY P; GILES A S; TRAUT E P; GILES A

Number of Countries: 100 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20020147862	A1	20021010	US 2001282111	P	20010407	200320 B
			US 2001918295	A	20010730	
WO 200282262	A2	20021017	WO 2002US10078	A	20020401	200331
AU 2002338365	A1	20021021	AU 2002338365	A	20020401	200433

Priority Applications (No Type Date): US 2001282111 P 20010407; US 2001918295 A 20010730

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20020147862	A1		13	G06F-003/00	Provisional application US 2001282111

WO 200282262 A2 E G06F-009/40

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA
CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN
IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ
OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA
ZM ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR
IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

AU 2002338365 A1 G06F-009/40 Based on patent WO 200282262

Abstract (Basic): US 20020147862 A1

NOVELTY - A physical hard drive has a fixed size file storing content of the hard drive and a dynamically expanding file through which a client computer performs the content write operations to the fixed size file.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

- (1) computer system;
- (2) write operations performance method;
- (3) undo operation performance method; and
- (4) virtual hard drive content synchronization method.

USE - For data storage devices such as computer system (claimed) e.g. personal computer.

ADVANTAGE - Use of the differencing drive enable the client computer to access the data quickly, thereby providing the virtual hard drive with improved efficiency and expandable format.

DESCRIPTION OF DRAWING(S) - The figure shows a flowchart explaining the write operation performance process.

pp; 13 DwgNo 1/5

Title Terms: VIRTUAL; HARD; DRIVE; COMPUTER; SYSTEM; DYNAMIC; EXPAND; FILE; THROUGH; CLIENT; COMPUTER; PERFORMANCE; CONTENT; WRITING; OPERATE; FIX; SIZE; FILE

Derwent Class: T01

International Patent Class (Main): G06F-003/00; G06F-009/40

File Segment: EPI

15/5/9 (Item 5 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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012039824 **Image available**

WPI Acc No: 1998-456734/199839

XRPX Acc No: N98-356484

Processing apparatus for moving virtual storage resources between disk units - generates volume shift processing command to activate attribute check section, volume copying section and catalog modifying section for shifting virtual storage resources to large capacity disk unit

Patent Assignee: FUJITSU LTD (FUJIT)

Inventor: HAYASHI K; TAMAKI A

Number of Countries: 002 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5794255	A	19980811	US 94275361	A	19940715	199839 B
			US 96621895	A	19960326	
JP 3315779	B2	20020819	JP 93285455	A	19931116	200261

Priority Applications (No Type Date): JP 93285455 A 19931116

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 5794255	A	13	G06F-017/30	Cont of application US 94275361
JP 3315779	B2	10	G06F-012/00	Previous Publ. patent JP 7141231

Abstract (Basic): US 5794255 A

The apparatus includes a first disk unit (22) provided for an

external storage system of a computer. The stored contents from the first disk are transferred to a **second disk** unit (24) of larger storage capacity. **Virtual storage** resources are stored in the data section of the first **disk** unit. A **space map** (50) for managing a number of tracks, is provided in the catalog section (48) of the first disk unit. An attribute check section (40) checks whether the track capacity of the first disk unit and the **second disk** unit agree with each other. A volume copying section (42) receives the transfer process instruction from a higher level device when the track capacities are in agreement.

The volume copying section copies the **space map** and the volume of the **virtual storage** resources, in the first disk unit. A catalog **modifying** section (44) rewrites the **space map** copied into the **second disk** unit. A command generating section of the higher level device, generates a volume shift processing command and activates the attribute check section, the volume copying section and the catalog **modifying** section. The **virtual storage** resources of the first disk unit are shifted to the **second disk** unit.

ADVANTAGE - Enables transfer from small to large capacity disk unit even when contents of volume are **virtual storage** resources. Enables rewriting of **space map** corresponding to track capacity at destination.

Dwg.6/7

Title Terms: PROCESS; APPARATUS; MOVE; VIRTUAL; STORAGE; RESOURCE; DISC; UNIT; GENERATE; VOLUME; SHIFT; PROCESS; COMMAND; ACTIVATE; ATTRIBUTE; CHECK; SECTION; VOLUME; COPY; SECTION; CATALOGUE; MODIFIED; SECTION; SHIFT; VIRTUAL; STORAGE; RESOURCE; CAPACITY; DISC; UNIT

Derwent Class: T01

International Patent Class (Main): G06F-012/00; G06F-017/30

File Segment: EPI

15/5/10 (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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010182315 **Image available**

WPI Acc No: 1995-083568/199512

XRPX Acc No: N95-066264

Data storage redundancy management system for disk array - has disc array with RAID management system that maps two areas one used for mirror redundancy and another for parity redundancy

Patent Assignee: HEWLETT-PACKARD CO (HEWP)

Inventor: BAIRD R; FORDEMWALT J W; JACOBSON M B; NELSON M D; VAZIRE H; VOIGT D L

Number of Countries: 006 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 639811	A2	19950222	EP 94107148	A	19940506	199512 B
US 5392244	A	19950221	US 93109137	A	19930819	199513
EP 639811	B1	20030423	EP 94107148	A	19940506	200329
DE 69432545	E	20030528	DE 632545	A	19940506	200343
			EP 94107148	A	19940506	

Priority Applications (No Type Date): US 93109137 A 19930819

Cited Patents: No-SR.Pub

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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EP 639811	A2	E	10	G06F-011/10	
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Designated States (Regional): DE FR GB IE IT

US 5392244	A		9	G06F-011/00	
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EP 639811	B1	E		G06F-011/10	
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Designated States (Regional): DE FR GB IE IT

DE 69432545	E			G06F-011/10	Based on patent EP 639811
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Abstract (Basic): EP 639811 A

The memory system includes an array of discs in a RAID configuration with mirror and parity based areas. The disc array (10) has a number of discs (12) and a disc controller (14) to manage access to the array.

A RAID management system (16) arranges for two types of areas on the discs. One area is managed as a mirror memory RAID level 1, and the other as a parity memory, RAID level 5. The disc management causes migration between the two types of area based on some access protocol, e.g. more frequently accessed data may be held in the mirror area.

ADVANTAGE - High performance system. High data availability. Low cost system.

Dwg. 4/4

Title Terms: DATA; STORAGE; REDUNDANT; MANAGEMENT; SYSTEM; DISC; ARRAY; DISC; ARRAY; RAID; MANAGEMENT; SYSTEM; MAP; TWO; AREA; ONE; MIRROR; REDUNDANT; PARITY; REDUNDANT

Derwent Class: T01

International Patent Class (Main): G06F-011/00; G06F-011/10

International Patent Class (Additional): G06F-011/20; G06F-015/02

File Segment: EPI

15/5/11 (Item 7 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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009324829 **Image available**

WPI Acc No: 1993-018293/199302

XRPX Acc No: N93-013932

Phantom duplex copy group apparatus for disk drive array data storage subsystem - emulates operation of large form factor drive using small form factor disks configured into redundancy groups

Patent Assignee: STORAGE TECHNOLOGY CORP (STOS)

Inventor: BELSAN J S; LUDLAM H S; RUDESEAL G A

Number of Countries: 018 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9222865	A1	19921223	WO 92US3653	A	19920501	199302 B
AU 9219268	A	19930112	AU 9219268	A	19920501	199317
US 5239659	A	19930824	US 91717820	A	19910619	199335

Priority Applications (No Type Date): US 91717820 A 19910619

Cited Patents: US 4084231; US 4310883; US 4837680; US 4914656; US 4942579; US 4989205; US 4989206

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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WO 9222865	A1	E	68	G06F-011/16	
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Designated States (National): AU CA JP

Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LU MC NL SE

AU 9219268	A			G06F-011/16	Based on patent WO 9222865
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US 5239659	A		26	G06F-012/16	
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Abstract (Basic): WO 9222865 A

The system comprises a number of disc drives (12*-*), configured into redundancy groups (421-428). A control unit (101) receives a stream of data records and stores them in available memory space. I/O (120) and control and drive circuits (121) write each of the received streams of data records and associated redundancy data in the memory.

A cache stores discs drive data. A host processor (11,12) requests activation of duplex copy group capability for primary (401) and secondary (402) virtual data storage devices to emulate the secondary virtual data storage device.

USE/ADVANTAGE - Data storage subsystems. Provides redundant copies of data records for associated host processor. High reliability.

Dwg. 1/10
Title Terms: PHANTOM; DUPLEX; COPY; GROUP; APPARATUS; DISC; DRIVE; ARRAY;
DATA; STORAGE; SUBSYSTEM; OPERATE; FORM; FACTOR; DRIVE; FORM; FACTOR;
DISC; CONFIGURATION; REDUNDANT; GROUP
Derwent Class: T01; T03
International Patent Class (Main): G06F-011/16; G06F-012/16
International Patent Class (Additional): G06F-011/80; G06F-013/00
File Segment: EPI

15/5/12 (Item 8 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

008736041 **Image available**
WPI Acc No: 1991-240057/199133
XRPX Acc No: N91-183079

Data storage method using cache - mapping data into large virtual
external address space through cache without disturbing logical view of
data

Patent Assignee: IBM CORP (IBMC); INT BUSINESS MACHINES CORP (IBMC)
Inventor: BOZMAN G P; EISENBERGE G; LETT A S; MYERS J J; TETZLAFF W H;
UNGER J H; EISENBERGER G

Number of Countries: 004 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 441508	A	19910814	EP 91300595	A	19910125	199133 B
US 5088026	A	19920211	US 90477704	A	19900209	199209
EP 441508	A3	19930421	EP 91300595	A	19910125	199401
EP 441508	B1	19960724	EP 91300595	A	19910125	199634

Priority Applications (No Type Date): US 90477704 A 19900209

Cited Patents: NoSR.Pub; 2.Jnl.Ref; EP 52370; JP 2116940; JP 62189543; US
4459658; US 4612612; US 4757447

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
EP 441508	B1 E	10	G06F-012/08	

Designated States (Regional): DE FR GB

Abstract (Basic): EP 441508 A

The data accessing method comprises the steps of referencing pages
in a given file according to their addresses in a linear space as
mapped into a virtual external storage address (VESA) and then as
mapped into a physical address in external storage. Referenced pages
are written into the cache using their VESA addresses as indexing
arguments if not otherwise located in the cache. Then, in response to a
write request from the processor updating in place those cached
pages common to two files, otherwise shadow copying updated pages
into another cache location using another VESA address. The pages are
written out from the data cache to physical addresses in external
storage only upon change.

The validity of a page in the cache is maintained as long as the
VESA address remains unchanged. The system comprises a processor (1)
having internal storage (3) formed from RAM addressable pages and
external storage (5) formed from DASD addressable pages. A cache (2) is
adapted to assign device dependent location in a logical external
storage space (VF0 and VF1) to pages AV1P0 and AV1P1 to be accessed.

ADVANTAGE - Reduces problem presented by synonyms. (9pp Dwg.No.1/7
Title Terms: DATA; STORAGE; METHOD; CACHE; MAP; DATA; VIRTUAL; EXTERNAL;
ADDRESS; SPACE; THROUGH; CACHE; DISTURB; LOGIC; VIEW; DATA
Derwent Class: T01
International Patent Class (Main): G06F-012/08
International Patent Class (Additional): G06F-001/00
File Segment: EPI

15/5/13 (Item 9 from file: 350)
DIALOG(R) File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

008196640 **Image available**

WPI Acc No: 1990-083641/199011

XRPX Acc No: N90-064438

Emulation of single logical disk drive - using number of disk drives
in parallel with synchronised spindles and controller transparent to
host computer

Patent Assignee: CRAY RES INC (CRAY)

Inventor: HALFORD R J

Number of Countries: 012 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9001737	A	19900222	WO 89US262	A	19890523	199011 B
US 5128810	A	19920707	US 88227367	A	19880802	199230
			US 91727282	A	19910703	

Priority Applications (No Type Date): US 88227367 A 19880802; US 91727282 A
19910703

Cited Patents: EP 156724; EP 242121; EP 320107; JP 57197664

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 9001737 A E 31

Designated States (National): JP

Designated States (Regional): AT BE CH DE FR GB IT LU NL SE

US 5128810 A 12 G11B-005/09 Cont of application US 88227367

Abstract (Basic): WO 9001737 A

The multiple disc drive array storage device (103) **emulates** the operation of a single disc drive, so that the handshaking and protocol between the array storage device and the most computer (101) appears to be that of a single disc drive. The array storage device includes a number of individual disc drives (900a-q), each of which has its spindle synchronised to a master clock synchronisation.

Digital data words are received by the controller (108) which diodes the words into subparts and **writes** each subpart, plus a parity check, to a **different disc drive** within the array storage device. The buffering and formatting of the digital data for reading and writing is accomplished by the controller, transparent to the most computer.

USE/ADVANTAGE - High performance computing environment. Large capacity, high speed

Title Terms: **EMULATION**; SINGLE; LOGIC; DISC; DRIVE; NUMBER; DISC; DRIVE; PARALLEL; SYNCHRONISATION; SPINDLE; CONTROL; TRANSPARENT; HOST; COMPUTER

Derwent Class: T01

International Patent Class (Main): G11B-005/09

International Patent Class (Additional): G06F-003/06

File Segment: EPI

15/5/14 (Item 10 from file: 350)
DIALOG(R) File 350:Derwent WPIX
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004605246

WPI Acc No: 1986-108590/198617

XRPX Acc No: N86-080027

Dynamically allocated local-global storage system - for multi-processor system by assigning first and second storage portions to reference and any other processor respectively

Patent Assignee: INT BUSINESS MACHINES CORP (IBMC); IBM CORP (IBMC)

Inventor: BRANTLEY W C; MCAULIFEE K P; NORTON V A; PFISTER G F; WEISS J

Number of Countries: 007 Number of Patents: 009

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
GB 2165975	A	19860423	GB 8525903	A	19851021	198617 B
EP 179401	A	19860430	EP 85113174	A	19851017	198618
CA 1236588	A	19880510				198823
CN 8507534	A	19870415				198827
US 4754394	A	19880628	US 84664131	A	19841024	198828
GB 2165975	B	19880720				198829
US 4980822	A	19901225	US 88168721	A	19880316	199103
EP 179401	B1	19920722	EP 85113174	A	19851017	199230
DE 3586389	G	19920827	DE 3586389	A	19851017	199236
			EP 85113174	A	19851017	

Priority Applications (No Type Date): US 84664131 A 19841024; US 88168721 A 19880316

Cited Patents: 1.Jnl.Ref; A3...8937; No-SR.Pub; US 3796996; US 3820079

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
GB 2165975	A		12		
EP 179401	A	E			
				Designated States (Regional): DE FR GB IT	
EP 179401	B1	E		G06F-012/02	
				Designated States (Regional): DE FR GB IT	
DE 3586389	G			G06F-012/02	Based on patent EP 179401

Abstract (Basic): GB 2165975 B

A table look-up provides a quantity, the interleave amount, which indicates whether the real address is in local or global storage and, which in the latter event, is used to derive the absolute addresses. The low order bits of the real address may be hashed using Remap (252) to introduce a random element into a sequence of consecutive addresses. The rear address after mapping excluding the word offset (WO) is passed to right rotate device (256) which is controlled by the interleave amount.

The width of the field to be rotated and the amount the field is to be rotated are specified by the interleave amount. The derived absolute addresses are entered in register (258) and are passed for use onto a communication network interconnecting the processors and the storage system. Local and global storage is distributed amongst the nodes of a multiprocessor network. (12pp Dwg.No.7/8)

File 348:EUROPEAN PATENTS 1978-2005/Jun W01

(c) 2005 European Patent Office

File 349:PCT FULLTEXT 1979-2005/UB=20050602,UT=20050526

(c) 2005 WIPO/Univentio

Set	Items	Description
S1	104195	EMULAT???? OR SIMULAT???? OR (VIRTUAL? OR GUEST) (2W) (PC? ? OR COMPUTER? ? OR SYSTEM? ? OR OS OR ENVIRONMENT)
S2	911823	DRIVE OR DRIVES OR DISK? ? OR DISC? ? OR HARDDRIVE? ? OR HARDDISK? ? OR HARDDISC? ? OR STORE? ? OR STORAGE
S3	3631	(VIRTUAL OR EMULAT? OR SIMULAT? OR GUEST) (2W) S2
S4	21	DIFFERENCING(2W) (S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ? OR AREA)
S5	13132	(TEMPORARY OR TRANSIENT OR STAGING) (2W) (S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ? OR AREA)
S6	77473	(SECOND? OR 2ND OR SUBORDINATE? OR CHILD OR DIFFERENT OR SEPARATE) (2W) (S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ? OR AREA)
S7	186461	(WRIT??? OR WRITTEN OR CHANG??? OR DELET???? OR ERAS???? OR UPDAT??? OR EDIT??? OR MODIF???? OR MODIFICATION? ? OR ALTER??? OR ALTERATION? ?) (10N) (S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ? OR AREA)
S8	31033	S2 (7N) (SYNC??? OR SYNCHRONIZ?????? OR SYNCHRONIS?????? OR RECONCIL? OR CONFORM? OR MAP????)
S9	951	RAM() (DISK OR DRIVE? ?)
S10	73	(S1 OR S3) (30N) S4:S6 (30N) S7 (30N) S8
S11	62	S10 AND AC=US/PR
S12	60	S11 AND AY=(1976:2001)/PR
S13	61	S10 AND PY=1976:2001
S14	70	S12:S13
S15	13	S9 (10N) (SYNC??? OR SYNCHRONIZ?????? OR SYNCHRONIS?????? OR RECONCIL? OR CONFORM? OR MAP????)

14/3,K/4 (Item 4 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
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00994646

Improved disk log using distributed write
Verbesserter Disk-Log mit verteiltem Schreibsystem
Disque-log ameliore avec systeme d'enregistrement reparti

PATENT ASSIGNEE:

Hewlett-Packard Company, (206030), 3000 Hanover Street, Palo Alto,
California 94304, (US), (Applicant designated States: all)

INVENTOR:

Voigt, Douglas L., 3030 N. 24th, Boise, Idaho 83702, (US)
Burkes, Don L., 3100 San Ramon Dr., Meridian, ID 83642, (US)
Hanson, Kirk A., 1129 West Newfield Dr., Eagle, Idaho 83616, (US)

LEGAL REPRESENTATIVE:

Schoppe, Fritz, Dipl.-Ing. (55463), Schoppe, Zimmermann & Stockeler
Patentanwalte Postfach 71 08 67, 81458 Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 899731 A2 990303 (Basic)
EP 899731 A3 001011

APPLICATION (CC, No, Date): EP 98105564 980326;

PRIORITY (CC, No, Date): US 920120 970826

DESIGNATED STATES: DE; GB

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: G11B-019/02; G11B-027/00; G11B-027/10;
G11B-020/12; G06F-011/14

ABSTRACT WORD COUNT: 253

NOTE:

Figure number on first page: 2

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	9909	577
SPEC A	(English)	9909	5730
Total word count - document A			6307
Total word count - document B			0
Total word count - documents A + B			6307

...SPECIFICATION more critical than in the dual controller environment.

The hierarchic disk array 11 can be characterizable as **different** storage spaces, including its physical storage space and one or more virtual storage spaces. For example, storage...

...are related through mapping techniques. For example, the physical storage space of the disk array can be **mapped** into a virtual storage space which delineates **storage** areas according to the various data reliability levels. Some areas within the virtual storage space can be...

...5. These areas may be configured on the same or separate disks or any combination thereof.

Data **storage** system 10 includes a memory **map** **store** 21 that provides for persistent **storage** of the virtual **mapping** information used to **map** disk array 11. The memory **map** **store** is external to the **disk** array, and preferably resident in the **disk** array controller 14. The memory **mapping** information can be continually or periodically updated by the controller 14 or RAID management system 16 as the various mapping configurations among the different views change.

Preferably, the memory **map** **store** 21 is embodied as two non-volatile RAMs (Random Access Memory) 21a and 21b which are located...

14/3,K/12 (Item 12 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
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00948285

EMULATOR FOR VISUAL DISPLAY OBJECT FILES AND METHOD OF OPERATION THEREOF
EMULATOR ZUR VISUALISIERUNG VON OBJEKTDATEN UND BETRIEBSVERFAHREN DAZU
EMULATEUR DE FICHIER D'OBJETS A VISUALISER ET SA METHODE D'EXPLOITATION
PATENT ASSIGNEE:

HONEYWELL INC., (246050), Honeywell Plaza, Minneapolis Minnesota 55408,
(US), (Proprietor designated states: all)

INVENTOR:

CALL, William, L., 2311 W. Corrine Drive, Phoenix, AZ 85029, (US)
CLAWSON, Laurence, A., P.O. Box 4205, Cave Creek, AZ 85331, (US)
CONNOLLY, Paul, S., 4738 W. Cheryl Drive, Glendale, AZ 85302, (US)
FREIMARK, Ronald, J., 13014 N. 62nd Street, Scottsdale, AZ 85254, (US)
GUSTIN, Jay, W., 6226 E. Joan de Arc, Scottsdale, AZ 85254, (US)
HODGE, Michael, L., 4044 East Cascalote Drive, Cave Creek, AZ 85331, (US)
MCGAUGH, Paul, 6523 Jade Knoll, San Antonio, TX 78249, (US)
MOORE, Donald, W., 2901 E. Friess Drive, Phoenix, AZ 85032, (US)
RACHLIN, Elliott, H., 5542 E. Beverly Lane, Scottsdale, AZ 85254, (US)
RAMSDELL, Steven, C., 3751 W. Monte Cristo Avenue, Phoenix, AZ 85023,
(US)

LEGAL REPRESENTATIVE:

Powell, Timothy John et al (69723), Eric Potter Clarkson, Park View
House, 58 The Ropewalk, Nottingham NG1 5DD, (GB)

PATENT (CC, No, Kind, Date): EP 929849 A1 990721 (Basic)
EP 929849 B1 030319
WO 98015878 980416

APPLICATION (CC, No, Date): EP 97944365 970923; WO 97US16908 970923

PRIORITY (CC, No, Date): US 727727 961007

DESIGNATED STATES: DE; FR; GB

INTERNATIONAL PATENT CLASS: G05B-019/042; G06F-003/14

NOTE:

No A-document published by EPO

LANGUAGE (Publication, Procedural, Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200312	2402
CLAIMS B	(German)	200312	2111
CLAIMS B	(French)	200312	2900
SPEC B	(English)	200312	13123
Total word count - document A			0
Total word count - document B			20536
Total word count - documents A + B			20536

...SPECIFICATION than one physical disk drive.

In a preferred embodiment of this aspect of the present invention, the emulator further comprises a **second block storage file**, the address **mapping** routine being capable of alternatively cooperating with the **second block storage file** to intercede between the native visual display object file and the real time process control system to allow communication of the data therebetween. This embodiment of the present invention therefore allows multiple **block storage files** to be used. This may be advantageous when **modifying** the real time plant control system or when controlling multiple of such systems.

In still yet another...on a single physical disk drive or span more than one physical disk drive.

If the exemplary emulator includes more than one **block storage file**, the address **mapping** routine being capable of alternatively cooperating with the **second block storage file** to intercede between the native visual display object file and real time process control system 100 to allow communication of the data therebetween. This embodiment allows multiple **block storage files** to be used which may be advantageous when **modifying** real time plant control system 100 or when controlling multiple of such systems.

Turning now FIGURES 4A...

...CLAIMS said address pointer that corresponds to a particular logical block in said block storage file, said block storage file and address mapping routine thereby substitutable for said mass storage device without requiring modifications to said...

...emulator according to Claim 31 wherein said multiasking operating system is WINDOWS(R) NT(R).

33. An emulator according to Claim 31 or 32 wherein said block storage file is stored on a non-native mass storage device (305).

34. An emulator according to any of Claims 31 to 33 wherein other routines executing in said multiasking operating system are capable of using said block storage file concurrently with said address mapping routine.

35. An emulator according to any of Claims 31 to 34 wherein said particular logical block is 256 bytes in length.

36. An emulator according to any of Claims 31 to 35 wherein said block storage file is stored on a single physical disk drive.

37. An emulator as according to any of Claims 31 to 36 further comprising a second block storage file, said address mapping routine being capable of alternatively cooperating with said second block storage file to intercede between said native visual display object file and said real time process control system (100... a native-formatted removable-media mass storage device, executable in a non-native, multitasking operating system of emulating said mass storage device, the method comprising the steps of:
intercepting an address pointer of a native visual display object...

14/3,K/13 (Item 13 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
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00776325

Methods for using non contiguously reserved storage space for data migration in a redundant hierarchic data storage system

Verfahren zur Verwendung von nicht-aneinandergrenzenden reservierten Speicherplatz zur Datenmigration in einem hierarchischen redundanten Datenspeichersystem

Methode pour l'utilisation d'espace de stockage reserve, non-contign, pour migration de donnees dans un systeme de stockage de donnees redondante hierarchique

PATENT ASSIGNEE:

Hewlett-Packard Company, (206030), 3000 Hanover Street, Palo Alto, California 94304, (US), (Applicant designated States: all)

INVENTOR:

Burkes, Theresa A., 3100 San Ramon Drive, Meridian, Idaho 83642, (US)

Diamond, Bryan M., 9704 Ramsgate, Boise, Idaho 83704, (US)

Jacobson, Michael B., 8884 Austin, Boise, Idaho 83714, (US)

Nelson, Marvin D., 9055 Sunflower Lane, Boise, Idaho 83704, (US)

Voigt, Douglas L., 3030 N. 24th, Boise, Idaho 83702, (US)

LEGAL REPRESENTATIVE:

Schoppe, Fritz, Dipl.-Ing. (55463), Schoppe, Zimmermann & Stockeler

Patentanwalte Postfach 71 08 67, 81458 Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 726514 A2 960814 (Basic)

EP 726514 A3 000223

APPLICATION (CC, No, Date): EP 95112454 950808;

PRIORITY (CC, No, Date): US 386573 950210

DESIGNATED STATES: DE; FR; GB; IT

INTERNATIONAL PATENT CLASS: G06F-003/06; G06F-011/10; G06F-011/20;

G11B-020/18

ABSTRACT WORD COUNT: 231

NOTE:

Figure number on first page: 1

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPAB96	1045
SPEC A	(English)	EPAB96	8455
Total word count - document A			9500
Total word count - document B			0
Total word count - documents A + B			9500

...SPECIFICATION however, with a single controller or other architectures.

The hierarchic disk array 11 can be characterized as **different** storage spaces, including its physical storage space and one or more virtual storage spaces. These various views...

...are related through mapping techniques. For example, the physical storage space of the disk array can be **mapped** into a virtual storage space which delineates **storage** areas according to the various data reliability levels. Some areas within the virtual storage space can be ...

...The various mapping techniques and virtual spaces concerning RAID levels are described below in more detail.

Data **storage** system 10 includes a memory **map** **store** 21 that provides for persistent **storage** of the virtual **mapping** information used to **map** different **storage** spaces onto one another. The memory **map** **store** is external to the **disk** array, and preferably resident in the **disk** array controller 14. The memory **mapping** information can be continually or periodically updated by the controller or RAID management system as the various mapping configurations among the different views change.

Preferably, the memory **map** **store** 21 is embodied as two non-volatile RAMs (Random Access Memory) 21a and 21b which are located...

14/3,K/14 (Item 14 from file: 348)
 DIALOG(R)File 348:EUROPEAN PATENTS
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00776324

Disk array having hot spare resources and methods for using hot spare resources to store user data

Speicherplattenanordnung mit Ersatzbetriebsmitteln in Betrieb und Verfahren zur Verwendung von Ersatzbetriebsmitteln zum Speichern von Benutzerdaten

Reseau de disques avec ressources de reserve en fonctionnement et methodes pour utiliser les ressources de reserve pour le stockage de donnees d'utilisateur

PATENT ASSIGNEE:

Hewlett-Packard Company, A Delaware Corporation, (3016020), 3000 Hanover Street, Palo Alto, CA 94304, (US), (Proprietor designated states: all)

INVENTOR:

Nelson, Marvin D., 9055 Sunflower Lane, Boise, Idaho 83704, (US)
 Burkes, Theresa A., 3100 San Ramon Drive, Meridian, Idaho 83642, (US)
 Diamond, Bryan M., 9704 Ramsgate, Boise, Idaho 83704, (US)
 Jacobson, Michael B., 8884 Austin, Boise, Idaho 83714, (US)
 Dolphin, Wade A., 7179 Petrie, Boise, Idaho 83704, (US)
 Voigt, Douglas L., 3030 N. 24th, Boise, Idaho 83702, (US)

LEGAL REPRESENTATIVE:

Schoppe, Fritz, Dipl.-Ing. (55463), Schoppe, Zimmermann, Stockeler & Zinkler Patentanwalte Postfach 246, 82043 Pullach bei Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 726521 A2 960814 (Basic)
 EP 726521 A3 000223
 EP 726521 B1 031029

APPLICATION (CC, No, Date): EP 95112336 950804;

PRIORITY (CC, No, Date): US 386574 950210

DESIGNATED STATES: DE; FR; GB

INTERNATIONAL PATENT CLASS: G06F-003/06; G06F-011/10; G06F-011/20;

G11B-020/18

ABSTRACT WORD COUNT: 183

NOTE:

Figure number on first page: 1

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPAB96	928
CLAIMS B	(English)	200344	985
CLAIMS B	(German)	200344	933
CLAIMS B	(French)	200344	1233
SPEC A	(English)	EPAB96	7267
SPEC B	(English)	200344	7354
Total word count - document A			8196
Total word count - document B			10505
Total word count - documents A + B			18701

...SPECIFICATION however, with a single controller or other architectures.

The hierarchic disk array 11 can be characterized as **different** storage spaces, including its physical storage space and one or more virtual storage spaces. These various views...

...are related through mapping techniques. For example, the physical storage space of the disk array can be **mapped** into a virtual storage space which delineates **storage** areas according to the various data reliability levels. Some areas within the virtual storage space can be ...

...The various mapping techniques and virtual spaces concerning RAID levels are described below in more detail.

Data **storage** system 10 includes a memory **map store** 21 that provides for persistent **storage** of the virtual **mapping** information used to **map** different **storage** spaces into one another. The memory **map store** is external to the disk array, and preferably resident in the disk array controller 14. The memory **mapping** information can be continually or periodically updated by the controller or RAID management system as the various mapping configurations among the different views change.

Preferably, the memory **map store** 21 is embodied as two non-volatile RAMs (Random Access Memory) 21a and 21b which are located...

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...are related through mapping techniques. For example, the physical storage space of the disk array can be **mapped** into a virtual storage space which delineates **storage** areas according to the various data reliability levels. Some areas within the virtual storage space can be...

...The various mapping techniques and virtual spaces concerning RAID levels are described below in more detail.

Data **storage** system 10 includes a memory **map store** 21 that provides for persistent **storage** of the virtual **mapping** information used to **map** different **storage** spaces into one another. The memory **map store** is external to the disk array, and preferably resident in the disk array controller 14. The memory **mapping** information can be continually or periodically updated by the controller or RAID management system as the various mapping configurations among the different views change.

Preferably, the memory **map store** 21 is embodied as two non-volatile

RAMs (Random Access Memory) 21a and 21b which are located...

14/3,K/15 (Item 15 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
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00776323

Disk array having redundant storage and methods for incrementally generating redundancy as data is written to the disk array

Speicherplattenanordnung mit redundanter Speicherung und Verfahren zur inkrementalen Redundanzzeugung während des Datenschreibens auf die Speicherplattenanordnung

Reseau de disques a stockage redondant et methodes pour la generation incrementielle de redondance pendant l'ecriture des donnees sur le reseau de disques

PATENT ASSIGNEE:

Hewlett-Packard Company, A Delaware Corporation, (3016020), 3000 Hanover Street, Palo Alto, CA 94304, (US), (Proprietor designated states: all)

INVENTOR:

Voigt, Douglas L., 3030 N. 24th, Boise, Idaho 83702, (US)

Nelson, Marvin D., 9500 Sunflower Lane, Boise, Idaho 83704, (US)

LEGAL REPRESENTATIVE:

Schoppe, Fritz, Dipl.-Ing. (55463), Schoppe, Zimmermann, Stockeler & Zinkler Patentanwälte Postfach 246, 82043 Pullach bei Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 726520 A2 960814 (Basic)

EP 726520 A3 000329

EP 726520 B1 040519

APPLICATION (CC, No, Date): EP 95112326 950804;

PRIORITY (CC, No, Date): US 386582 950210

DESIGNATED STATES: DE; FR; GB

INTERNATIONAL PATENT CLASS: G06F-003/06; G06F-011/10; G06F-011/20;

G11B-020/18

ABSTRACT WORD COUNT: 254

NOTE:

Figure number on first page: 1

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPAB96	982
CLAIMS B	(English)	200421	708
CLAIMS B	(German)	200421	709
CLAIMS B	(French)	200421	898
SPEC A	(English)	EPAB96	8122
SPEC B	(English)	200421	8119

Total word count - document A 9105

Total word count - document B 10434

Total word count - documents A + B 19539

...SPECIFICATION however, with a single controller or other architectures.

The hierarchic disk array 11 can be characterized as **different** storage spaces, including its physical storage space and one or more virtual storage spaces. These various views...

...are related through mapping techniques. For example, the physical storage space of the disk array can be **mapped** into a virtual storage space which delineates **storage** areas according to the various data reliability levels. Some areas within the virtual storage space can be ...

...The various mapping techniques and virtual spaces concerning RAID levels are described below in more detail.

Data **storage** system 10 includes a memory **map store** 21 that provides for persistent **storage** of the virtual **mapping** information

used to map different storage spaces into one another. The memory map store is external to the disk array, and preferably resident in the disk array controller 14. The memory mapping information can be continually or periodically updated by the controller or RAID management system as the various mapping configurations among the different views change.

Preferably, the memory map store 21 is embodied as two non-volatile RAMs (Random Access Memory) 21a and 21b which are located...

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...The various mapping techniques and virtual spaces concerning RAID levels are described below in more detail.

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Preferably, the memory map store 21 is embodied as two non-volatile RAMs (Random Access Memory) 21 a and 21 b which...

14/3,K/16 (Item 16 from file: 348)
DIALOG(R) File 348:EUROPEAN PATENTS
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00774650

Methods for avoiding overcommitment of virtual capacity in a redundant hierarchic data storage system

Verfahren zur Vermeidung der Über-Zuteilung virtueller Kapazität in einem redundanten hierarchischen Datenspeichersystem

Methode pour éviter l'allocation excessive de capacité virtuelle dans un système de stockage de données à redondance hiérarchique

PATENT ASSIGNEE:

Hewlett-Packard Company, A Delaware Corporation, (3016020), 3000 Hanover Street, Palo Alto, CA 94304, (US), (Proprietor designated states: all)

INVENTOR:

Burkes, Theresa A., 3100 San Ramon Drive, Meridian, Idaho 83642, (US)

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Nelson, Marvin D., 9055 Sunflower Lane, Boise, Idaho 83704, (US)

LEGAL REPRESENTATIVE:

Schoppe, Fritz, Dipl.-Ing. (55463), Schoppe, Zimmermann, Stockeler & Zinkler Patentanwälte Postfach 246, 82043 Pullach bei München, (DE)

PATENT (CC, No, Kind, Date): EP 725324 A2 960807 (Basic)

EP 725324 A3 000223

EP 725324 B1 050309

APPLICATION (CC, No, Date): EP 95112325 950804;

PRIORITY (CC, No, Date): US 382350 950201

DESIGNATED STATES: DE; FR; GB; IT

INTERNATIONAL PATENT CLASS: G06F-003/06; G06F-011/10; G06F-011/20;

G11B-020/18; G06F-012/12

ABSTRACT WORD COUNT: 264

NOTE:

Figure number on first page: 1

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPAB96	1437
CLAIMS B	(English)	200510	1552
CLAIMS B	(German)	200510	1465
CLAIMS B	(French)	200510	1917
SPEC A	(English)	EPAB96	8887
SPEC B	(English)	200510	9194
Total word count - document A			10325
Total word count - document B			14128
Total word count - documents A + B			24453

...SPECIFICATION however, with a single controller or other architectures.

The hierarchic disk array 11 can be characterized as **different** storage spaces, including its physical storage space and one or more virtual storage spaces. These various views...

...are related through mapping techniques. For example, the physical storage space of the disk array can be **mapped** into a virtual storage space which delineates **storage** areas according to the various data reliability levels. Some areas within the virtual storage space can be ...

...The various mapping techniques and virtual spaces concerning RAID levels are described below in more detail.

Data **storage** system 10 includes a memory **map** **store** 21 that provides for persistent **storage** of the virtual **mapping** information used to **map** different **storage** spaces into one another. The memory **map** **store** is external to the **disk** array, and preferably resident in the **disk** array controller 14. The memory **mapping** information can be continually or periodically updated by the controller or RAID management system as the various mapping configurations among the different views change.

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...SPECIFICATION however, with a single controller or other architectures.

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Preferably, the memory **map** **store** 21 is embodied as two non-volatile RAMs (Random Access Memory) 21a and 21b which are located...

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00652238

**FLASH FILE SYSTEM
SCHNELL LOESCHBARE DATEI
SYSTEME DE MEMOIRE FLASH**

PATENT ASSIGNEE:

M-SYSTEMS LTD., (1849510), P.O.Box 58032, 61580 Tel Aviv, (IL),
(applicant designated states: DE;FR;GB;IT;NL)
M-SYSTEMS INC., (1849530), 200 Broadhollow Road, Melville, NY 11747, (US)
(applicant designated states: DE;FR;GB;IT;NL)

INVENTOR:

BAN, Amir, 47 Yehuda Hamaccabi, 62309 Tel Aviv, (IL)

LEGAL REPRESENTATIVE:

Vossius, Volker, Dr. et al (12524), Dr. Volker Vossius,
Patentanwaltskanzlei - Rechtsanwaltskanzlei, Holbeinstrasse 5, 81679
Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 688450 A1 951227 (Basic)

EP 688450 B1 981111

WO 9420906 940915

APPLICATION (CC, No, Date): EP 94910145 940228; WO 94US1848 940228

PRIORITY (CC, No, Date): US 27131 930308

DESIGNATED STATES: DE; FR; GB; IT; NL

INTERNATIONAL PATENT CLASS: G06F-012/02; G06F-003/06;

NOTE:

No A-document published by EPO

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
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CLAIMS B	(English)	9846	924
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CLAIMS B	(German)	9846	873
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CLAIMS B	(French)	9846	1019
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SPEC B	(English)	9846	4031
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Total word count - document A	0
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Total word count - document B	6847
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Total word count - documents A + B	6847
------------------------------------	------

...CLAIMS virtual map that maps virtual addresses (29) to physical
addresses (37) within a unit;
organizing said first **virtual map** stored in said memory (12) in
segments of page addressable blocks;
storing in a random access memory (16...

...of said page addressable blocks in said memory (12),
changing a page addressable block in said first **virtual** stored in
said memory (12) by **writing** a **changed** page addressable block in
an unwritten physical block location; and
updating said **second virtual map** stored in said random access
memory (16) so that it maps the page address of the changed page...

14/3,K/32 (Item 32 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

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00539513

**Method and apparatus for extending physical system addressable memory.
Verfahren und Gerat zur Erweiterung von physisch adressierbarem Speicher.
Methode et dispositif pour etendre l'adressage d'une memoire discrete.**

PATENT ASSIGNEE:

International Business Machines Corporation, (200120), Old Orchard Road,
Armonk, N.Y. 10504, (US), (applicant designated states: DE;FR;GB)

INVENTOR:

Bealkowski, Richard, 1401 Hummingbird Drive, Delray Beach, Florida 33444,
(US)

LEGAL REPRESENTATIVE:

Blakemore, Frederick Norman (28381), IBM United Kingdom Limited
Intellectual Property Department Hursley Park, Winchester Hampshire
SO21 2JN, (GB)

PATENT (CC, No, Kind, Date): EP 515046 A1 921125 (Basic)

APPLICATION (CC, No, Date): EP 92303836 920428;

PRIORITY (CC, No, Date): US 705277 910524

DESIGNATED STATES: DE; FR; GB

INTERNATIONAL PATENT CLASS: G06F-012/08;

ABSTRACT WORD COUNT: 87

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	563
SPEC A	(English)	EPABF1	4029
Total word count - document A			4592
Total word count - document B			0
Total word count - documents A + B			4592

...SPECIFICATION controller 400 responds via the Bus Interface 414 to memory address references in the range defined for **emulated** RAM address space 406. The use of bus interfaces for addressing, control, and movement of data are...

...the usual disk read or write requests associated with the operation of a file system. The secondary **storage** requests 408 are received from the I/O bus 230. For ease of illustration, the connection to...

...read/writes to distinguish them from read/writes pertaining to the emulated RAM address space 406. The **secondary storage** interface 412 controls I/O read/writes through the **secondary storage** manager 418 under control of the mapping layer and control 416 section of the **secondary storage** controller 400. The **mapping** layer and control 416 determines priority of access to the **secondary storage** 106 when requests are simultaneously pending on the bus interface 414 and the **secondary storage** interface 412. For example, in a multiprocessor system, one processor could be attempting an I/O read or write while another processor could be attempting to access emulated RAM address space 406. The **secondary storage** manager 418 is responsible for controlling data movement to and from the **secondary storage** 106.

With proper buffering the actual amount of disk accesses can be reduced due to locality of...

14/3,K/33 (Item 33 from file: 348)
DIALOG(R) File 348:EUROPEAN PATENTS
(c) 2005 European Patent Office. All rts. reserv.

00503368

LOGICAL TRACK WRITE SCHEDULING SYSTEM FOR A PARALLEL DISK DRIVE ARRAY DATA STORAGE SUBSYSTEM

LOGISCHES SPURSCHREIBZUORDNUNGSSYSTEM FUR PARALLELES PLATTENLAUFWERKSMATRIX DATENSPEICHERUNGSUNTERSYSTEM

SYSTEME D'ORDONNANCEMENT D'ECRITURE DE PISTES LOGIQUES POUR UN SOUS-SYSTEME DE MEMORISATION DE DONNEES A RESEAU D'UNITES DE DISQUES EN PARALLELE

PATENT ASSIGNEE:

STORAGE TECHNOLOGY CORPORATION, (494313), 2270 South 88th Street,
Louisville, CO 80028, (US), (applicant designated states:
AT;BE;CH;DE;DK;ES;FR;GB;GR;IT;LI;LU;NL;SE)

INVENTOR:

MILLIGAN, Charles, Allen, 14300 West 50th Avenue, Golden, CO 80403, (US)
RUDESEAL, George, Arthur, 1083 Quince Avenue, Boulder, CO 80304, (US)

LEGAL REPRESENTATIVE:

Goodanew, Martin Eric et al (31082), MATHISEN, MACARA & CO. The Coach
House 6-8 Swakeleys Road, Ickenham Uxbridge UB10 8BZ, (GB)

PATENT (CC, No, Kind, Date): EP 526487 A1 930210 (Basic)
EP 526487 B1 971008
WO 9116711 911031
APPLICATION (CC, No, Date): EP 91907736 910405; WO 91US2358 910405
PRIORITY (CC, No, Date): US 509484 900416
DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FR; GB; GR; IT; LI; LU; NL; SE
INTERNATIONAL PATENT CLASS: G06F-011/10;
NOTE:

No A-document published by EPO
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	9710W1	2920
CLAIMS B	(German)	9710W1	2610
CLAIMS B	(French)	9710W1	3175
SPEC B	(English)	9710W1	10602
Total word count - document A			0
Total word count - document B			19307
Total word count - documents A + B			19307

...SPECIFICATION the fuzzy image copy to be a complete image copy. This produces the correct image of the file as it was at the end of the most recent modifications. The use of two alternating memory...

...necessitated by the fact that when a fuzzy image copy is being updated by the journal of changes, the second memory area stores memory updates occurring during the journal change update process. Therefore, for the mapping table backup, the journals are read out of cache memory 113 and used to update the fuzzy image copy of the mapping tables stored on redundancy groups of disk drives 122. As a further memory protection arrangement, each virtual track instance stored on the disks in the parallel disk drive array data storage subsystem 100 is self defining. Each...

14/3,K/34 (Item 34 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
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00479977

Data storage using a cache and method therefor
Datenspeicher mit Cache-Speicher und Verfahren dafür
Memoire de donnees avec antememoire et methode afferente
PATENT ASSIGNEE:

International Business Machines Corporation, (200120), Old Orchard Road, Armonk, N.Y. 10504, (US), (applicant designated states: DE;FR;GB)

INVENTOR:

Bozman, Gerald Parks, 609 Ramapo Valley Road, Oakland, New Jersey 07436, (US)

Eisenberger, George, 54 Albemarle Road, White Plains, New York 10605, (US)

Lett, Alexander Stafford, 402 MacGregor Drive, Mahopac, New York 10541, (US)

Myers, James Joseph, 950 Columbus Avenue No.6, San Francisco, CA 94133, (US)

Tetzlaff, William Harold, 37 Fox Den Road, Mount Kisco, New York 10549, (US)

Unger, Jay Harold, Knollwood Court, Mohegan Lake, New York 10547, (US)

LEGAL REPRESENTATIVE:

Burt, Roger James, Dr. (52152), IBM United Kingdom Limited Intellectual Property Department Hursley Park, Winchester Hampshire SO21 2JN, (GB)

PATENT (CC, No, Kind, Date): EP 441508 A2 910814 (Basic)
EP 441508 A3 930421
EP 441508 B1 960724

APPLICATION (CC, No, Date): EP 91300595 910125;

PRIORITY (CC, No, Date): US 477704 900209
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: G06F-012/08;
ABSTRACT WORD COUNT: 100

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	372
CLAIMS B	(English)	EPAB96	429
CLAIMS B	(German)	EPAB96	475
CLAIMS B	(French)	EPAB96	502
SPEC A	(English)	EPABF1	3025
SPEC B	(English)	EPAB96	3076
Total word count - document A			3397
Total word count - document B			4482
Total word count - documents A + B			7879

...SPECIFICATION to the intermediary space is many to one. Thus, two linear spaces sharing the same page would **map** to one single **virtual** external **storage** address (VESA) without synonym problems. The use of intermediate external storage avoids the synonym problem.
Referring now...

...bears the logical name File A Version 1 (AV1). It comprises original pages 0 and 1. The **second** file 31 bears the logical name **File A** Version 2 (AV2). AV2 includes original page 0 and **modified** page 1 (page 1'). The pages 0, 1, and 1' are mapped into the VESA addresses (so...

...SPECIFICATION to the intermediary space is many to one. Thus, two linear spaces sharing the same page would **map** to one single **virtual** external **storage** address (VESA) without synonym problems. The use of intermediate external storage avoids the synonym problem.
Referring now...

...bears the logical name File A Version 1 (AV1). It comprises original pages 0 and 1. The **second** file 31 bears the logical name **File A** Version 2 (AV2). AV2 includes original page 0 and **modified** page 1 (page 1'). The pages 0, 1, and 1' are mapped into the VESA addresses (so...

14/3,K/35 (Item 35 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
(c) 2005 European Patent Office. All rts. reserv.

00431885

External sorting using virtual storage.
Externe Sortierung mit Hilfe eines virtuellen Speichers.
Triage externe utilisant une memoire virtuelle.
PATENT ASSIGNEE:

International Business Machines Corporation, (200120), Old Orchard Road,
Armonk, N.Y. 10504, (US), (applicant designated states: DE;FR;GB)

INVENTOR:

Archer, Gary David, 186 Michael Drive, Campbell, CA 95008, (US)
Case, Douglas Robert, 182 Banff Springs Way, San Jose, CA 95139, (US)
Wu, Hilda Jya-wei, 7214 Silver Lode Lane, San Jose, CA 95120, (US)

LEGAL REPRESENTATIVE:

Burt, Roger James, Dr. (52152), IBM United Kingdom Limited Intellectual
Property Department Hursley Park, Winchester Hampshire SO21 2JN, (GB)

PATENT (CC, No, Kind, Date): EP 411788 A2 910206 (Basic)
EP 411788 A3 920805

APPLICATION (CC, No, Date): EP 90307840 900718;

PRIORITY (CC, No, Date): US 389243 890802

DESIGNATED STATES: DE; FR; GB

INTERNATIONAL PATENT CLASS: G06F-007/36;

ABSTRACT WORD COUNT: 121

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	1001
SPEC A	(English)	EPABF1	3595
Total word count - document A			4596
Total word count - document B			0
Total word count - documents A + B			4596

...SPECIFICATION are moved to RSAREA based on the sorted pointers.

(4) Save the address of RSAREA in a **Storage Map Table**, STGMAP, and page out the contents to **secondary storage**.

(5) Obtain another segment of **virtual storage**. The size of this segment is equal to the size of RSAREA, 16 MB in this example...

...until all records in the input file are called, sorted (arranged), moved to internal (real) memory backed **virtual storage**, swapped out to **secondary store**, and **virtual storage** address recorded.

Note that the process of grouping a number of records before **writing** them to external **storage** is called "blocking". The blocking process has to be applied to the records in RSAREA before they...

...may be paged out, they are already in the required format, so to speak.

Assume that expanded **store** is available:

(7) Steps (1) - (6) are **modified** such that as the size of **virtual storage** GETMAINED and referenced exceeds the size of the real storage, the least recently used **virtual storage** pages are paged out to expanded storage. Also, the RSAREA with the smallest index (I) number will...

...expanded storage. Since there are 256 MB of expanded storage available, no pages will be moved to **secondary storage**.

MERGE Phase

The file to be sorted was partitioned into $200/16 = 13$ subsets or 13 sorted strings. The size of each string is about 16 MB. Each entry in the **Storage Map Table** points to the starting **virtual storage** address of a sorted string.

Using entries in the **Storage Map Table** to find the first record of each string, the first record of each string is placed...

...may already be paged out to expanded storage, so they have to be brought into internal (real) **storage**. INAREA is now used as the output buffer area. When INAREA is full, the data in INAREA will be **written** to an output **file**. This process continues until all records are merged to become one output file.

In this invention, **virtual storage** embraces a sort work data set and is not merely a "sorting area". While using **virtual storage** as a "sorting area" may avoid data movements to **secondary storage**, it nevertheless is penalized by the fact that a data reference pattern for typical internal sorting is random and records could potentially be referenced many times. If the amount of **virtual storage** is too big relative to the amount of real storage available, it is very likely that a...

...to rise, "thrashing" problems might occur.

A subset of records from each ordered string that had been **mapped** into **virtual storage** are merged together. This data may already have been migrated to either expanded storage or to auxiliary...

...A Comparison

Ordinarily, external sorts tend to be I/O bound (i.e., reference to external or **secondary storage**). This means that most of the elapsed time of an external sort is usually spent waiting for...

14/3,K/53 (Item 1 from file: 349)
DIALOG(R) File 349:PCT FULLTEXT
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01022565 **Image available**

DATA BACKUP AND RESTORATION USING DYNAMIC VIRTUAL STORAGE
SAUVEGARDE DE SECURITE ET RESTAURATION DE DONNEES FAISANT APPEL A UNE
MEMOIRE VIRTUELLE DYNAMIQUE

Patent Applicant/Assignee:

VOOM TECHNOLOGIES INC, P.O. Box 71, Lakeland, MN 55043-0071, US, US
(Residence), US (Nationality)

Inventor(s):

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BIESSENER David W, 1397 Clippership Alcove, Woodbury, MN 55125, US,
CHECKY Michael T, 532 Hyde Avenue, Mahtomedi, MN 55115, US,

Legal Representative:

SIEFFERT Kent J (agent), Shumaker & Sieffert, P.A., 8425 Seasons Parkway,
Suite 105, St. Paul, MN 55125, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200352604 A1 20030626 (WO 0352604)

Application: WO 2002US40031 20021211 (PCT/WO US0240031)

Priority Application: US 200120086 20011214

Designated States:

(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ
EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR
LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SK
SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW

(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SI SK
TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 8436

Fulltext Availability:

Detailed Description

Claims

English Abstract

...having one or more physical storage devices, and a controller (6)
coupled to the processor and the storage system. The controller
maintains a virtual storage map (VSM) allocating a primary virtual
storage (10A) and a secondary virtual storage (10B) within a
storage system (8). The controller stores data received from the
processor prior to a time T0 on the primary virtual storage, stores
data received from the processor after time T0 on the secondary
virtual storage. The controller updates the VSM in response to a save
command to reallocate the primary virtual storage to include data
written to the secondary virtual storage. In this manner, the
system can backup data in a manner that appears almost instantaneous to
the...

Detailed Description

... organization.

SUMMARY

[00051 In general, the invention is directed to a system that makes use
of dynamic virtual storage to save and restore data within a computing
environment. The system may include a controller that...and the storage
system. The controller maintains a virtual

include the data written to the secondary storage device after TO. 5 1
The method of claim 49, wherein receiving the save command via a
apparatus comprising:
a computer-readable medium to store a virtual storage map (VSM)
allocating a primary virtual storage and a secondary virtual storage
within a storage system;
an input/output (I/O); and
a control unit to update the VSM...

...from software executing on a processor within a host computer.

54 A method comprising:
storing a virtual storage map (VSM) to define a set of storage
units for a primary
virtual storage and a secondary virtual storage ;
storing history data indicating a sequence of save and restore commands;
and storing version data for the storage units of secondary virtual
storage , wherein the version data associates one of the commands within
the history data with each of the storage units of the secondary
virtual storage .

55 The method of claim 54, further comprising:
receiving a save command;
adjusting the VSM in response...

14/3,K/55 (Item 3 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00984798 **Image available**
DATA BACKUP METHOD AND SYSTEM USING SNAPSHOT AND VIRTUAL TAPE
PROCEDE ET SYSTEME DE SAUVEGARDE DE DONNEES UTILISANT UNE BANDE INSTANTANEE
ET VIRTUELLE

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Patent and Priority Information (Country, Number, Date):

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Application: WO 2002US24709 20020806 (PCT/WO US0224709)

Priority Application: US 2001923384 20010808

Designated States:

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prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ
EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS
LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ
TM TR TT TZ UA UG UZ VN YU ZA ZW

(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 8468

Fulltext Availability:

Detailed Description

Claims

1 1 (c-2) if the element has not already been copied, then copying the element to its **mapped** location in the **second** direct access **storage** device.

2 The method of claim 1 further comprising the act of during the iterating act, intercepting a...

...copied, wherein, if such a write command is intercepted, copying the element from the first direct access **storage** device to its **mapped** location in the **second** direct access **storage** device, then executing the write command.

3 The method ...The method of claim 1 further comprising the act of: storing the set of data into the **second** direct access **storage** device using a second input-output (110) access protocol (SCSIIFC). i 6. The method of claim 5 wherein the **second** **file** access protocol is Open System protocol.

7 The method ...with the one of bits has been copied from the first direct access storage device to the **second** direct access storage device.

14 The method of claim 1 further comprising:
copying ...the first direct access storage device;
(b) means for mapping destination locations in a second direct access **storage** device for each element of the set, wherein the destination locations are in a sequence
emulating ...means for determining if the each element of the set has already been
copied to the **second** direct access **storage** device; and
(c-2) means for copying the element to its **mapped** location in the **second** direct access **storage** device if the element has not already been copied.

17 The system of claim 16 further comprising the first direct access **storage** device to its **mapped** location in the **second** direct access **storage** device, then executing the write command.

18 The system of claim 16 further comprising:
means for retrieving...

...The system of claim 16 further comprising:
- 28 means for storing the set of data into the **second** direct access **storage** device using a second input-output (110) protocol.

21 The system of claim 20 wherein the **second** **file** access protocol is Open System protocol.

22 The system of claim 16 further comprising:
means for identifying...

14/3,K/56 (Item 4 from file: 349)
DIALOG(R) File 349:PCT FULLTEXT
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00948121 **Image available**

METHOD FOR ESTABLISHING A DRIVE IMAGE IN A COMPUTING ENVIRONMENT
PROCEDE PERMETTANT DE CREER UNE IMAGE DE LECTEUR DANS UN ENVIRONNEMENT INFORMATIQUE

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200282262 A2-A3 20021017 (WO 0282262)

Application: WO 2002US10078 20020401 (PCT/WO US02010078)

Priority Application: US 2001282111 20010407; US 2001918295 20010730

Designated States:

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prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ
EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR
LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI
SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 6713

Fulltext Availability:

Detailed Description

Claims

Detailed Description

... by the data of block 50. As such, the location of the blocks in the dynamically expanding file tracks the sequence the sequence that the blocks were written to, rather than tracking the sequence the...of the differencing drive, which expands to accommodate writes to the differencing drive. Included in the differencing drive is a bit map for identifying the blocks of the virtual hard drive that have been written to or recorded in the differencing drive. The differencing drives of the present invention may be cascaded. A differencing drive may be added such that the original differencing drive is the parent of the newly added differencing drive. When the target drive for write operations is switched to the newly added differencing drive, the content of the original differencing drive is fixed and writes to the virtual hard drive by the emulated computer system are made to the newly added differencing drive.

The virtual hard drive...may be maintained at a server computer and each of the client computers may include a differencing drive that includes the writes made by the client computer to the parent drive of the server computer.

The method disclosed herein is advantageous in that it provides for the ...operating system 18 (Figure 1), however, still views drive image 202 as the hard drive of the emulated computer system.

When the emulated computer system is ...Like a dynamically expanding drive, the differencing drive includes a bit map. In the case of a differencing drive, each bit of the bit map corresponds to one of the available blocks of the virtual hard drive. If a bit of the bit map of the differencing drive is a logical 1, the content of the corresponding block has been written to and is present in the differencing drive. If a bit of the bit map of the differencing drive is a logical 0, the content of the corresponding block either has not been written ...to or the content of the corresponding block can be found in the parent drive of the differencing drive. Although the differencing drive performs in many ways like a dynamically expanding drive, the differencing drive can be a complement to either a fixed

drive of an emulated computer system of claim 8, wherein the step of recording the result of the write operation comprises the step of expanding the size of the **file** associated with the differencing **drive** to accommodate the **written** to blocks of the differencing **drive**.

10 The method for performing a **write** operation to the virtual hard **drive** of an emulated computer system of claim 8, further comprising the step of maintaining a bit map...to the emulated computer system to be the hard drive of the emulated computer system;
performing a **write** operation in the emulated computer system to the hard

drive of the emulated computer system;
recording the result of the **write** operation in the differencing **drive** of the virtual hard **drive** such that **write** operations performed to the virtual hard **drive** of the host computer system are performed in the differencing drive rather than in the parent drive...computing session.

13 The method for performing an undo operation on a virtual hard drive of an **emulated** computer system of claim 11, wherein the step of prompting the user for a determination comprises the...of the hard drive, synchronizing the content of the hard drive of the emulated computer system by **writing** the content of the differencing **drive** to the content of the parent drive.

15 A virtual hard drive of an emulated computer system...drive of the computer system comprising a primary differencing drive;
a third file on the physical hard **drive** of the computer system comprising a secondary differencing **drive**; and
wherein **write** operations to the virtual hard **drive** are made to the primary differencing drive during a first time interval, the primary differencing recording the **writes** to the virtual hard **drive** and expanding in size to accommodate the content of **write** operations to the virtual hard **drive** during the first time interval;
wherein **write** operations to the virtual hard **drive** are made to the secondary differencing drive during a second time interval, the secondary differencing **drive** recording the **writes** to the virtual hard **drive** and expanding in size to accommodate **write** operations to the virtual hard **drive** during the second time interval.

16 The virtual hard drive of an emulated computer system of claim...

14/3,K/57 (Item 5 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00932133

STORAGE VIRTUALIZATION SYSTEM AND METHODS
SYSTEME ET PROCEDES DE VIRTUALISATION DE STOCKAGE

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Patent and Priority Information (Country, Number, Date):

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Application: WO 2002US919 20020111 (PCT/WO US0200919)
Priority Application: US 2001261140 20010111

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AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ
EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR
LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI
SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 7757

Fulltext Availability:

Detailed Description

Detailed Description

... to a level of abstraction implemented in software that servers use to divide available physical storage into **virtual disks** or volumes. Virtual volumes are used by the Operating System (OS) as if they were physical disks. In fact, it is generally impossible for an operating system to perceive them as anything but real **disks**. The **Storage Virtualization Layer** redirects or **maps** I/O requests made against a **virtual disk** to blocks in real **storage**. This direction/redirection means that **changes** in the physical location of **storage** blocks (to service access patterns, performance requirements, growth requirements or failure recovery) can be accommodated by a simple update of the virtual-to-real mappings.

A virtual volume can be created, expanded, **deleted**, moved and selectively presented independent of the **storage** subsystems on which it resides. Furthermore, a virtual volume may include storage space in **different storage** subsystems, each with different characteristics. Virtualization architectures will play a key role in solving centralization problems, enabling...

14/3,K/60 (Item 8 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00482051 **Image available**

DATA FILE STORAGE MANAGEMENT SYSTEM FOR SNAPSHOT COPY OPERATIONS

SYSTEME DE GESTION DE MEMOIRE DE FICHIERS DE DONNEES POUR OPERATIONS DE
COPIE SELECTIVE

Patent Applicant/Assignee:

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Inventor(s):

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MILILLO Michael Steven,

O'BRIEN John Timothy,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9913403 A1 19990318

Application: WO 98US7458 19980415 (PCT/WO US9807458)

Priority Application: US 97925787 19970909

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

JP AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

Publication Language: English

Fulltext Word Count: 16051
Patent and Priority Information (Country, Number, Date):
Patent: ... 19990318
Fulltext Availability:
Detailed Description
Publication Year: 1999

Detailed Description

... of the snapshot copy operation must wait until the first set of mapping table pointers have been updated .

Data Storage Subsystem Architecture

1 0 The present data file storage management system for snapshot copy operations 106 is implemented in a dynamically mapped virtual data storage

subsystem 100 ...data file. This translation of the virtual track identification to the logical address corresponding to the physical storage location comprises the "dynamically mapped virtual" aspect of the data storage subsystem 100. A cache memory 102 is included in the data storage subsystem 1 00 to provide temporary storage for data files as well as data used by the controller 104. The present data file storage...

14/3,K/70 (Item 18 from file: 349)
DIALOG(R) File 349:PCT FULLTEXT
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00168292 **Image available**
SINGLE DISK EMULATION FOR SYNCHRONOUS DISK ARRAY
EMULATION DE DISQUE UNIQUE POUR RESEAU DE DISQUES SYNCHRONES

Patent Applicant/Assignee:

CRAY RESEARCH INC,
Inventor(s):

HALFORD Robert J,
Patent and Priority Information (Country, Number, Date):

Patent: WO 9001737 A1 19900222
Application: WO 89US2262 19890523 (PCT/WO US8902262)
Priority Application: US 88367 19880802

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AT BE CH DE FR GB IT JP LU NL SE

Publication Language: English

Fulltext Word Count: 6148

Patent and Priority Information (Country, Number, Date):

Patent: ... 19900222

English Abstract

A multiple disk drive array storage device is described which emulates the operation of a single disk drive so that the handshaking and protocol between the array storage...

...be that of a single disk drive. The array storage device includes a plurality of individual disk drives , each of which having its spindle synchronized to the other disk drives using a master clock synchronization . Digital data words are received by the array storage device controller which divides the words into subparts and writes each subpart to a different disk drive within the storage device. The buffering and formatting of the digital data for reading and writing from the individual disk drives is accomplished by the controller transparent to the host computer.

File 8: Ei Compendex(R) 1970-2005/May W5
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File 65: Inside Conferences 1993-2005/Jun W1
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(c) 2005 Japan Science and Tech Corp(JST)
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File 144: Pascal 1973-2005/May W5
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File 434: SciSearch(R) Cited Ref Sci 1974-1989/Dec
(c) 1998 Inst for Sci Info
File 34: SciSearch(R) Cited Ref Sci 1990-2005/May W5
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File 99: Wilson Appl. Sci & Tech Abs 1983-2005/May
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File 266: FEDRIP 2005/Jun
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File 95: TEME-Technology & Management 1989-2005/May W1
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File 438: Library Lit. & Info. Science 1984-2005/May
(c) 2005 The HW Wilson Co

Set	Items	Description
S1	3328814	EMULAT???? OR SIMULAT???? OR (VIRTUAL? OR GUEST) (2W) (PC? ? OR COMPUTER? ? OR SYSTEM? ? OR OS OR ENVIRONMENT)
S2	3224164	DRIVE OR DRIVES OR DISK? ? OR DISC? ? OR VOLUME? ? OR HARD-DRIVE? ? OR HARDDISK? ? OR HARDDISC? ? OR STORE? ? OR STORAGE
S3	15020	(VIRTUAL OR EMULAT? OR SIMULAT? OR GUEST) (2W) S2
S4	32	DIFFERENCING (2W) (S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ? OR AREA)
S5	4506	(TEMPORARY OR TRANSIENT OR STAGING) (2W) (S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ? OR AREA)
S6	34957	(SECOND? OR 2ND OR SUBORDINATE? OR CHILD OR DIFFERENT OR SEPARATE) (2W) (S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ? OR AREA)
S7	262852	(WRIT??? OR WRITTEN OR CHANG??? OR DELET???? OR ERAS???? OR UPDAT??? OR EDIT??? OR MODIF???? OR MODIFICATION? ? OR ALTER??? OR ALTERATION? ?) (10N) (S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ? OR AREA)
S8	22570	S2 (7N) (SYNC??? OR SYNCHRONIZ?????? OR SYNCHRONIS?????? OR RECONCIL? OR CONFORM? OR MAP????)
S9	374	RAM() (DISK OR DRIVE? ?)
S10	1	(S1 OR S3) AND S4: S6 AND S7 AND S8
S11	387	(S1 OR S3) AND S4: S6 AND S7
S12	381	S1 AND S11
S13	22	S3 AND S12
S14	23	S10 OR S13
S15	0	S9 (10N) (SYNC??? OR SYNCHRONIZ?????? OR SYNCHRONIS?????? OR RECONCIL? OR CONFORM? OR MAP????)
S16	18	RD S14 (unique items)

16/5/1 (Item 1 from file: 8)
DIALOG(R)File 8: Ei Compendex(R)
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06786254 E.I. No: EIP04148093000

Title: SFS: A Universal File System Cache for Disconnected FS Operations
Author: Chang, Henry; Novak, Frank; Tait, Carl; Hortensius, Peter
Corporate Source: IBM T.J. Watson Research Center, Yorktown Heights, NY 10598, United States

Conference Title: Joint Conference on Information Sciences - Proceedings, Abstracts and Summaries '94

Conference Location: Pinehurst, NC, United States **Conference Date:** 19941101-19941101

E.I. Conference No.: 62516

Source: Proceedings of the Joint Conference on Information Sciences 1994.

Publication Year: 1994

Language: English

Document Type: CA; (Conference Article) **Treatment:** T; (Theoretical)

Journal Announcement: 0404W1

Abstract: This paper describes the Shadow File System (SFS), a universal file system cache manager on OS/2 and Windows that supports operations involving disconnectable file systems such as network (LAN) file servers, peer-to-peer file servers and docking station disk drives. SFS is a file system redirector that intercepts file system calls to remote file systems. It provides whole-file caching while connected, and uses cached copies to simulate remote file system service during periods of disconnection. Modified files and directories are synchronized at reconnection time; any conflicting updates are reported to the user. We call SFS a universal file system because it is server-independent. This is a result of two features of the design. First, SFS is a client-side-only solution; no changes are required to server code. Second, remote drives are always accessed through drive letters: any remote file system that exports a drive to the local PC operating system can be managed by SFS. SFS is inspired by Coda left bracket Satyanarayanan92, Honeyman93 right bracket a disconnection-enabled caching file system. SFS, however, must deal with issues of consistency, synchronization, and conflict resolution in a multi-server, multi-platform PC computing environment. 6 Refs.

Descriptors: *Mobile telecommunication systems; Client server computer systems; Local area networks; Multi agent systems; Graphical user interfaces; Buffer storage; Computer operating systems; Servers; Synchronization

Identifiers: Shadow file systems (SFS); Remote file systems

Classification Codes:

722.4 (Digital Computers & Systems); 723.5 (Computer Applications); 722.2 (Computer Peripheral Equipment); 722.1 (Data Storage, Equipment & Techniques); 731.1 (Control Systems)

718 (Telephone & Other Line Communications); 722 (Computer Hardware); 723 (Computer Software, Data Handling & Applications); 731 (Automatic Control Principles & Applications)

71 (ELECTRONICS & COMMUNICATION ENGINEERING); 72 (COMPUTERS & DATA PROCESSING); 73 (CONTROL ENGINEERING)

16/5/2 (Item 2 from file: 8)
DIALOG(R)File 8: Ei Compendex(R)
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04743053 E.I. No: EIP97073720660

Title: Parallel file access for implementing dynamic load balancing on a massively parallel computer

Author: Shimizu, Masahisa; Oue, Yasuhiro; Ohnishi, Kazumasa; Kitamura, Toru

Corporate Source: Massively Parallel Systems Sanyo Lab, Tokyo, Jpn

Conference Title: Proceedings of the 1995 International Symposium on Parallel and Distributed Supercomputing

Conference Location: Fukuoka, Jpn Conference Date: 19950926-19950928
E.I. Conference No.: 46561
Source: IEICE Transactions on Information and Systems v E80-D n 4 Apr
1997. p 466-472
Publication Year: 1997
CODEN: ITISEF ISSN: 0916-8532
Language: English
Document Type: JA; (Journal Article) Treatment: T; (Theoretical)
Journal Announcement: 9708W4

Abstract: Because a massively parallel computer processes vast amounts of data and generates many access requests from multiple processors simultaneously, parallel **secondary storage** requires large capacity and high concurrency. One effective method of implementation of such **secondary storage** is to use disk arrays which have multiple disks connected in parallel. In this paper, we propose a parallel **file** access method named DECODE (dynamic express **changing** of data entry) in which load balancing of each **disk** is achieved by dynamic determination of the **write** data position. For resolution of the problem of data fragmentation which is caused by the relocation of data during a **write** process, the concept of 'Equivalent Area' is introduced. We have performed a preliminary performance evaluation using software **simulation** under various access statuses by changing the access pattern, access size and stripe size and confirmed the effectiveness of load balancing with this method. (Author abstract) 10 Refs.

Descriptors: *Parallel processing systems; Data acquisition; Computer software; Computer **simulation**; Magnetic **disk storage**; File organization; Storage allocation (computer)

Identifiers: Load balancing; Parallel file access

Classification Codes:

722.4 (Digital Computers & Systems); 723.2 (Data Processing); 723.5 (Computer Applications); 722.1 (Data Storage, Equipment & Techniques)
722 (Computer Hardware); 723 (Computer Software)
72 (COMPUTERS & DATA PROCESSING)

16/5/6 (Item 1 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online
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779231 ORDER NO: AAD82-11846
VIRTUAL STORAGE MANAGEMENT IN THE ABSENCE OF REFERENCE BITS
Author: BABA OGLU, OZALP
Degree: PH.D.
Year: 1981
Corporate Source/Institution: UNIVERSITY OF CALIFORNIA, BERKELEY (0028)
Source: VOLUME 42/12-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 4858. 181 PAGES
Descriptors: COMPUTER SCIENCE
Descriptor Codes: 0984

Virtual storage management requires a policy to replace data in primary storage with incoming data from **secondary storage**. To be effective, such a policy must select for replacement data that is not going to be needed in the near future. Having no knowledge about future demands for data, the replacement policy must anticipate them based on past demands.

In most implementations of **virtual storage systems**, past demand for data is recorded in a reference bit associated with that data. These bits can then be examined and/or **altered** by the replacement policy. This thesis extends the **virtual storage** concept to within each storage hierarchy level. The analysis of such hierarchical replacement policies confirm their suitability for managing storage hierarchies that lack reference bits.

Our preliminary studies are concerned with results that can be used in the evaluation of **virtual storage systems** in general. This

includes the development of a program that is capable of synthesizing certain referencing behaviors in a **virtual storage**.

Then, a class of hybrid replacement policies that employ different algorithms for the management of data in two logical partitions of primary storage is introduced and analyzed. It is shown that under certain conditions these hybrid policies incur little additional cost and perform as if reference bits were available. Trace-driven **simulations** are conducted to validate the findings of the analytic studies. These indicate that the conditions under which the hybrid policies exhibit good performance are rarely satisfied in an actual system.

As alternatives, the Clock and Sampled Working Set replacement policies are developed for this environment and shown to perform more robustly with respect to most variations encountered in a typical system.

Based on this work the global Clock algorithm is adopted as the page replacement policy in a **virtual storage** extension made to the UNIX operating system. The system runs on the VAX-11/780 computer, which lacks reference bits.

Formal models based on inventory control theory are finally developed to optimize certain policy parameters adopted in the implementation.

16/5/7 (Item 1 from file: 2)

DIALOG(R) File 2:INSPEC

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7597848 INSPEC Abstract Number: C2003-05-6110B-042

Title: A virtual file system for source program editing

Author(s): Atsushi, Y.; Naoki, F.

Author Affiliation: Center for Inf. Sci., Wakayama Univ., Japan

Conference Title: Ninth Asia-Pacific Software Engineering Conference.

ASPEC 2002 p.176-83

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Publisher: IEEE Comput. Soc, Los Alamitos, CA, USA

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Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: In this paper we propose a **virtual file system**, "SPDFS," which provides global declarations in source programs as virtual files to programmers. Global declarations means objects which declare identifiers in external scope, such as function definition and variable declaration. On SPDFS, programmers can **edit virtual files** directly by their favorite **editors**. **Changes** to declarations in a virtual file are to be applied to real source files automatically. SPDFS can also provide a set of relevant declarations distributed in **different source files** as a virtual file. Relevancy of declarations in this paper means references among declarations. SPDFS retrieves declarations which are referred by or refer to the target declaration and combine them in a virtual file. The depth of references can be specified in a file path by programmers. SPDFS reduces the amount of source programs which programmers need to read for editing and the amount of programmers' works for searching relevant declarations. We show an implementation of SPDFS using the portal file system on FreeBSD. The portal file system invokes commands for reading and

writing a virtual file respectively. These commands work as user-land process. Because no modification of kernel is required, it is easy to customize the behavior of SPDFS. We also show the effectiveness of SPDFS by comparing numbers of lines of source programs which programmers need to read for editing. (15 Refs)

Subfile: C

Descriptors: file organisation; software engineering; virtual storage

Identifiers: virtual file system; SPDFS; source programs; virtual files; software development; portal file system

Class Codes: C6110B (Software engineering techniques); C6120 (File organisation)

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16/5/10 (Item 4 from file: 2)

DIALOG(R)File 2:INSPEC

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02338720 INSPEC Abstract Number: C84050911

Title: A tale of two operating systems

Author(s): Daney, C.; Foth, T.

Journal: BYTE vol.9, no.9 p.42-56

Publication Date: 1984 Country of Publication: USA

CODEN: BYTEDJ ISSN: 0360-5280

Language: English Document Type: Journal Paper (JP)

Treatment: General, Review (G)

Abstract: The IBM PC XT/370 uses the VM/PC (virtual machine/personal computer) operating system. VM/PC shares many characteristics with the mainframe operating system known as VM/370. The main thing that these two operating systems have in common is known as CMS (conversational monitor system). The authors focus their comparison of CMS and PC-DOS from Microsoft on three different areas: the file system, command procedures, and system modification and extension. While Microsoft's PC-DOS is always working in your PC XT/370-even if only for I/O (input/output) operations-VM/CMS is invoked only when you are operating as, or networking with, a System/370 mainframe. (0 Refs)

Subfile: C

Descriptors: operating systems (computers); virtual storage

Identifiers: virtual memory; system extension; input/output operations; operating systems; IBM PC XT/370; VM/PC; CMS; conversational monitor system; PC-DOS; Microsoft; file system; command procedures; system modification; networking

Class Codes: C6120 (File organisation); C6150J (Operating systems)

File 275:Gale Group Computer DB(TM) 1983-2005/Jun 07
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File 621:Gale Group New Prod.Annou.(R) 1985-2005/Jun 07
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File 636:Gale Group Newsletter DB(TM) 1987-2005/Jun 07
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File 16:Gale Group PROMT(R) 1990-2005/Jun 07
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File 160:Gale Group PROMT(R) 1972-1989
(c) 1999 The Gale Group
File 148:Gale Group Trade & Industry DB 1976-2005/Jun 07
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(c) 2005 McGraw-Hill Co. Inc
File 15:ABI/Inform(R) 1971-2005/Jun 08
(c) 2005 ProQuest Info&Learning
File 647:CMP Computer Fulltext 1988-2005/May W4
(c) 2005 CMP Media, LLC
File 674:Computer News Fulltext 1989-2005/Jun W1
(c) 2005 IDG Communications
File 696:DIALOG Telecom. Newsletters 1995-2005/Jun 07
(c) 2005 The Dialog Corp.
File 369:New Scientist 1994-2005/Apr W3
(c) 2005 Reed Business Information Ltd.
File 810:Business Wire 1986-1999/Feb 28
(c) 1999 Business Wire
File 813:PR Newswire 1987-1999/Apr 30
(c) 1999 PR Newswire Association Inc
File 610:Business Wire 1999-2005/Jun 08
(c) 2005 Business Wire.
File 613:PR Newswire 1999-2005/Jun 08
(c) 2005 PR Newswire Association Inc

Set	Items	Description
S1	728321	EMULAT???? OR SIMULAT???? OR (VIRTUAL? OR GUEST) (2W) (PC? ? OR COMPUTER? ? OR SYSTEM? ? OR OS OR ENVIRONMENT)
S2	8318955	DRIVE OR DRIVES OR DISK? ? OR DISC? ? OR VOLUME? ? OR HARD-DRIVE? ? OR HARDDISK? ? OR HARDDISC? ? OR STORE? ? OR STORAGE
S3	26121	(VIRTUAL OR EMULAT? OR SIMULAT? OR GUEST) (2W) S2
S4	69	DIFFERENCING(2W) (S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ? OR AREA)
S5	16840	(TEMPORARY OR TRANSIENT OR STAGING) (2W) (S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ? OR AREA)
S6	130286	(SECOND? OR 2ND OR SUBORDINATE? OR CHILD OR DIFFERENT OR SEPARATE) (2W) (S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ? OR AREA)
S7	859788	(WRIT??? OR WRITTEN OR CHANG??? OR DELET???? OR ERAS???? OR UPDAT??? OR EDIT??? OR MODIF???? OR MODIFICATION? ? OR ALTER??? OR ALTERATION? ?) (10N) (S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ? OR AREA)
S8	43616	S2(7N) (SYNC??? OR SYNCHRONIZ?????? OR SYNCHRONIS?????? OR RECONCIL? OR CONFORM? OR MAP????)
S9	7164	RAM() (DISK OR DRIVE? ?)
S10	7	S3(50N)S4
S11	5	RD (unique items)
S12	19	(S1 OR S3) (30N)S4:S6(30N)S7(30N)S8
S13	31	S9(10N) (SYNC??? OR SYNCHRONIZ?????? OR SYNCHRONIS?????? OR RECONCIL? OR CONFORM? OR MAP????)
S14	50	S12:S13
S15	37	RD (unique items)
S16	36	S15 NOT PY=2002:2005

16/3,K/1 (Item 1 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01782537 SUPPLIER NUMBER: 16626761 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Corel CD Creator: let there be CDs. (Software Review) (Evaluation)
Karney, James
PC Magazine, v14, n5, p40(1)
March 14, 1995
DOCUMENT TYPE: Evaluation ISSN: 0888-8507 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT
WORD COUNT: 952 LINE COUNT: 00071

...ABSTRACT: free space left on the target disk and how much hard disk space will be needed for temporary files. CD Creator has some significant limitations; there are no simulation utilities to show what the CD will look like before actual recording takes place. Users can save ...

...a CD-Digital Audio drive for producing digital audio CDs and large amounts of memory and hard disk space. The software conforms to the standardized ISO-9660 CD-ROM format and can be used for file copying. Cutting a...

16/3,K/2 (Item 2 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01581233 SUPPLIER NUMBER: 13085423 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Utilities put the power in PBs. (PowerBook utility collections) (Product Watch)
Waltz, Mitzi
MacWEEK, v7, n1, p142(1)
Jan 4, 1993
ISSN: 0892-8118 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 821 LINE COUNT: 00066

... capability to run screen-saver modules compatible with Berkeley Systems Inc.'s After Dark; PowerSync, a data-synchronization utility; and PowerStart, a RAM disk utility. These three utilities also will be available as a combination package, tentatively titled The Power Suite...

16/3,K/3 (Item 3 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01564204 SUPPLIER NUMBER: 13085199
Norton Essentials overcome PB limitations: NEP keeps PBs charged and in sync. (Software Review) (Norton Essentials for PowerBook) (includes related summary article) (Evaluation)
Coleman, Dale
MacWEEK, v7, n1, p107(3)
Jan 4, 1993
DOCUMENT TYPE: Evaluation ISSN: 0892-8118 LANGUAGE: ENGLISH
RECORD TYPE: ABSTRACT

...ABSTRACT: folders to be synchronized as a named set that is added to a menu. A very small RAM disk can be kept synchronized to the hard disk to conserve power on a 4Mbyte PowerBook, and an 'Airport Shut Down' feature ...

16/3,K/4 (Item 4 from file: 275)

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01523452 SUPPLIER NUMBER: 12298916 (USE FORMAT 7 OR 9 FOR FULL TEXT)
New pared-down PowerBook will draw on Newton. (borrows heavily from Newton personal digital assistant technology) (Apple previews notebook computer aimed at consumer market) (Brief Article)
Ratcliffe, Mitch
MacWEEK, v6, n25, p1(2)
June 29, 1992
DOCUMENT TYPE: Brief Article ISSN: 0892-8118 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT
WORD COUNT: 686 LINE COUNT: 00055

... An application will copy files back and forth to help keep data on the mobile Mac in **sync** with the user's desktop machine.
> **RAM disk** software. Unlike the RAM disk in Apple's Memory control panel, PowerBoost's will automatically copy files...

16/3,K/5 (Item 5 from file: 275)
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01509951 SUPPLIER NUMBER: 12076722 (USE FORMAT 7 OR 9 FOR FULL TEXT)
The Macintosh: the choice for graphics. (Apple Macintosh Quadra 700) (Hardware Review) (one of four evaluations of microcomputers in 'Platforms: How the PC Stacks Up') (cover story) (Evaluation)
Zilber, Jon
PC Magazine, v11, n9, p127(3)
May 12, 1992
DOCUMENT TYPE: Evaluation ISSN: 0888-8507 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 2079 LINE COUNT: 00163

... copy of that file. Aliasing lets you have multiple references to the same document or application in **different folders**, or even on different machines. It takes no additional **storage** space and frees you from having to **reconcile changes** made to multiple copies of a document.
For PC connectivity, Macs ship with a standard floppy disk...

...a Mac-like on-screen representation of files on DOS hard disks. In addition, third-party DOS **emulators** are available; hardware solutions include Orange Micro's Orange-386 MS-DOS coprocessor, and software solutions include...

16/3,K/6 (Item 6 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01499780 SUPPLIER NUMBER: 11978275 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Solving problems: taming RAM disks on networks, database reports, and memo-field spell checking. (Set Expert On) (Column)
Olympia, P.L.
DBMS, v5, n3, p86(2)
March, 1992
DOCUMENT TYPE: Column ISSN: 1041-5173 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 1797 LINE COUNT: 00134

... RAM disk is drive G. The installation's network standard, unfortunately, calls for drive G to be **mapped** to the network email software directory. Thus, I "lose" the **RAM disk** as soon as I log into the network.

The solution to these problems comes in the form...

16/3,K/7 (Item 7 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01493947 SUPPLIER NUMBER: 11716344 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Capital Equipment Corp.: Capital OS/RAM 32, Capital OS/RAM 32 Plus.
(Hardware Review) (one of 9 evaluations of memory boards in 'MCA Memory
Boards: Expansion Without Delay') (Evaluation)
Rosch, Winn L.
PC Magazine, v11, n2, p229(2)
Jan 28, 1992
DOCUMENT TYPE: Evaluation ISSN: 0888-8507 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 750 LINE COUNT: 00055

... RAM cache.
Included with the setup program are EMS and XMS driver software,
diagnostics, and utilities (the RAM disk and a memory and I/O mapping
program). The boards are protected by a two-year warranty in an arena where
many of the...

16/3,K/8 (Item 8 from file: 275)
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01456419 SUPPLIER NUMBER: 11452302 (USE FORMAT 7 OR 9 FOR FULL TEXT)
QuickSCSI picks up a little speed for the Mac; PLI's NuBus card is latest
contender. (includes a related article summarizing the review) (Hardware
Review) (evaluation)
Magorian, Dan
MacWEEK, v5, n37, p37(2)
Oct 29, 1991
DOCUMENT TYPE: evaluation ISSN: 0892-8118 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 1254 LINE COUNT: 00097

... programs have essentially the same functionality as PLI's
TurboDrive formatter.

The manager is used most to **change** the start-up device or
force-mount **drives** that don't show up on the desktop. It also has the
interface to QuickSCSI's **second** main feature: **drive** mirroring.

This lets you automatically **write** all data to a **second drive** at
almost the same time as the first, providing a continuous backup. We tried
this and it...

...beyond backup by providing automatic error recovery, and at least tries
to handle problems gracefully. If you **simulate** a crash by turning off
QuickSCSI's primary mirrored disk in midoperation, the Mac crashes and the
two **disks** have to be re- **synced** by turning off mirroring and cloning one
from the other, a tedious operation that could take a...

...system is unusable). This is not discussed in the bare-bones
documentation.

Considering the cost of the **second disk** and the infrequency of
crashes, most sites probably will use one of the popular new digital audio
...

16/3,K/9 (Item 9 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01452768 SUPPLIER NUMBER: 11080351 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Fresh Technology releases MAP Assist version 3.0. (Fresh Technology Co.'s
network software) (product announcement)
LAN Computing, v2, n14, p27(1)
August, 1991
DOCUMENT TYPE: product announcement ISSN: 1055-1808 LANGUAGE:
ENGLISH RECORD TYPE: FULLTEXT
WORD COUNT: 141 LINE COUNT: 00011

... applications, copy files, and edit data on other workstations'
local drives. Hard drives, CDROMs, WORMs, floppy and RAM drives all can
be shared among MAP Assist users.

With MAP Assist, prices at \$349, users can back up another
workstation's local drives without having to move...

16/3,K/10 (Item 10 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01436466 SUPPLIER NUMBER: 10897126 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Micro Palm announces the PC/3000. (Micro Palm Computers Inc.'s hand-held
computer) (product announcement)
Computing Canada, v17, n12, p55(1)
June 6, 1991
DOCUMENT TYPE: product announcement ISSN: 0319-0161 LANGUAGE:
ENGLISH RECORD TYPE: FULLTEXT
WORD COUNT: 247 LINE COUNT: 00019

... PC/3000 has 512K RAM standard and is expandable to a total of eight
MB. Users can map the available memory to system or RAM disk to
provide the optimum operating environment for their application. All memory
is non-volatile (supported by a...

16/3,K/11 (Item 11 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01417764 SUPPLIER NUMBER: 09380026 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Opening up your Windows: WinSleuth 1.0. (Software Review) (Microsoft
Windows-environment diagnostic software from Dariana Technology Group
Inc.) (evaluation)
Brenesal, Barry
PC Sources, v2, n2, p351(1)
Feb, 1991
DOCUMENT TYPE: evaluation ISSN: 1052-6579 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 829 LINE COUNT: 00067

... drive mapping, and that it should be fixed by the time this review
appears.

The poor drive mapping resulted in yet another problem. Although I
had added the RAM drive to my CONFIG.SYS file, I had not allocated any
memory to it (not loading any memory...

16/3,K/12 (Item 12 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01378813 SUPPLIER NUMBER: 09573067 (USE FORMAT 7 OR 9 FOR FULL TEXT)
DDE holds promise, but has a way to go. (Dynamic Data Exchange)
PC Week, v7, n44, p123(4)

Nov 5, 1990

ISSN: 0740-1604

LANGUAGE: ENGLISH

RECORD TYPE: FULLTEXT; ABSTRACT

WORD COUNT: 2664

LINE COUNT: 00207

... a character limit somewhere between 9,500 and 10,100 in the configuration tested.

There are also file -management problems that have to be addressed. Routine changes such as moving source files to different directories or changing source file names means losing the DDE link. The only way to maintain the link is to update the...

...field code to reflect the change -- not exactly a transparent process. And in a network environment, where drives are mapped to different virtual drive letters, link management can quickly become a nightmare. It is difficult to imagine a resolution to this...

...any file information-management facilities. Any future progress will likely depend on a linked DDE database or file manager that can track all changes and make the appropriate updates.

Finally, these tests, running on a relatively fast system, found DDE to be a slow and tedious...

16/3,K/13 (Item 13 from file: 275)

DIALOG(R)File 275:Gale Group Computer DB(TM)

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01364145 SUPPLIER NUMBER: 08648546 (USE FORMAT 7 OR 9 FOR FULL TEXT)

Micro channel memory boards. (buyers guide)

Brazeau, Robin A.

PC Week, v7, n28, p92(1)

July 16, 1990

DOCUMENT TYPE: buyers guide

ISSN: 0740-1604

LANGUAGE: ENGLISH

RECORD TYPE: FULLTEXT

WORD COUNT: 1891

LINE COUNT: 00160

... Size of memory chips; d,s: 256K bytes or 1M byte; SIMMs.
System utilities: software, print spooler, RAM disk, diagnostics,
PCMAP (memory and I/O mapping utility).
Price; warranty: \$299; 2 years.
-----#-----
Vendor: Capital Equipment Corp..
Product: OS/RAM4, OS/RAM8.
Shipping date...

...chips: 100 ns.
Size of memory chips; d,s: 1M byte; SIMMs.
System utilities: software, print spooler, RAM disk, diagnostics,
PCMAP (memory and I/O mapping utility).
Price; warranty: \$225 (RAM4), \$375 (RAM8); 2 years.
-----#-----
Vendor: Computer Elektronik Infosys of America Inc..
Product...

16/3,K/14 (Item 14 from file: 275)

DIALOG(R)File 275:Gale Group Computer DB(TM)

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01315469 SUPPLIER NUMBER: 07918810 (USE FORMAT 7 OR 9 FOR FULL TEXT)

Micro Channel memory boards. (memory and multifunction board product table)
(buyers guide)

Brazeau, Robin

PC Week, v6, n47, p95(1)

Nov 27, 1989

Price: \$320.
-----#-----
Vendor: Tecmar.
Product: MicroRAM 386.
Type of board: expanded/extended with...
...512K; 10, 16, 20 or 25MHz.
Board specifications: full-sized; 1 slot.
System utilities: software, print spooler, **RAM disk**, diagnostics.
Features: 1 memory- **mapping** register set; network compatible;
switchless configuration.
Price: \$390.
-----#-----...

16/3,K/15 (Item 15 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01311327 SUPPLIER NUMBER: 07736638 (USE FORMAT 7 OR 9 FOR FULL TEXT)
IBM's ECF route to the host. (Enhanced Connectivity Facility)
Moran, Pat
Tech PC User, v1, n9, p38(6)
May, 1989
ISSN: 0954-6995 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 5051 LINE COUNT: 00378

... For example, the ECF command
VDISK START D: HF(FORMS) A(W)
will map the PC-DOS **drive D:** to the host file called FORMS and
requests write access to the file so that the **virtual disk** can be
changed. On completion of this command, all references to **drive D:** are
mapped to the DOS **disk** held in the host file called FORMS.
The main advantages that **virtual disks** offer are the ability for
many users to share access to a disk, so a read-only...
...supply a library of standard letters or forms for use by secretaries.
The other advantage is that **virtual disks** can be backed up using the
host's standard backup without relying on or requiring any action by the PC
user.

Virtual
Files
Virtual files differ from **virtual disks** in that each PC virtual
file is **mapped** to a **separate** host **file**, which is **stored** in host
file format and only appears to the PC application as if it were in PC...

16/3,K/16 (Item 16 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01293104 SUPPLIER NUMBER: 07234292 (USE FORMAT 7 OR 9 FOR FULL TEXT)
**EMS boards for AT bus machines. (memory and multifunction boards product
table) (buyers guide)**
Papa, Doreen M.
PC Week, v6, n17, p108(1)
May 1, 1989
DOCUMENT TYPE: buyers guide ISSN: 0740-1604 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT
WORD COUNT: 2083 LINE COUNT: 00210

... and 1 parallel port; 1 slot.
System compatibility: OS/2, Unix, Xenix, NetWare.
System utilities: print spooler; **RAM disk**.
Additional features: 32 **mapping** register sets; back-filing

...sized; 1 slot.

System compatibility: PCMCOS, Concurrent DOS, OS/2, Unix, Xenix, NetWare.

System utilities: print spooler; RAM disk ; diagnostics.

Additional features: zero-wait station supported; 1 mapping register set; allows upgrading in 1M-byte increments; back-filing capability.

Price; warranty: \$725 (2M bytes).

-----#-----

Vendor...

...sized; 1 slot.

System compatibility: PCMCOS, Concurrent DOS, OS/2, Unix, Xenix, NetWare.

System utilities: print spooler; RAM disk ; diagnostics.

Additional features: zero-wait station supported; 1 mapping register set; back-filing capability, software driver and utilities are compatible with the Intel Above Board.

Price...

...and 1 parallel port; 1 slot.

System compatibility: OS/2, Unix, Xenix, NetWare.

System utilities: print spooler; RAM disk ; diagnostics.

Additional features: zero-wait station supported; 1 mapping register set; back-filing capability; switchless, jumpless set-up; installation program included.

Price; warranty: \$399 (OK bytes...

...10/12MHz.

Board Specifications: full sized; 1 slot.

System compatibility: OS/2, Unix, Xenix, NetWare.

System utilities: RAM disk ; diagnostics.

Additional features: zero-wait station supported; 2048 mapping register sets; back-filing capability; autoROM option for auto-installation under protected mode operating systems.

Price; warranty...

...16/20MHz.

Board Specifications: full sized; 1 slot.

System compatibility: OS/2, Unix, Xenix, NetWare.

System utilities: RAM disk ; diagnostics.

Additional features: zero-wait station supported; 2048 mapping register sets; back-filing capability; autoROM option for auto-installation under protected mode operating systems; AutoSLOT feature...

...Board Specifications: full sized; 1 slot.

System compatibility: OS/2, Unix, Xenix, NetWare.

System utilities: print spooler; RAM disk .

Additional features: zero-wait station supported; 2 mapping register sets; back-filing capability; utility to display EMS configuration.

Price; warranty: \$99.

-----#-----

Vendor: STB Systems Inc...

16/3,K/17 (Item 17 from file: 275)
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01289560 SUPPLIER NUMBER: 07126822 (USE FORMAT 7 OR 9 FOR FULL TEXT)

Drawing out DESQview power. (Quarterback Office Systems' DESQview application program interface)

Hitt, Frederick J.

PC Tech Journal, v7, n4, p46(12)

April, 1989

ISSN: 0738-0194

LANGUAGE: ENGLISH

RECORD TYPE: FULLTEXT; ABSTRACT

WORD COUNT: 8352 . LINE COUNT: 00676

... code from conventional to expanded memory through the page frame offers no advantage over swapping to a **RAM disk** in expanded or extended memory.

Whether **mapping** processes into disjointed EMS blocks or stacking them in physical DOS memory, DESQview ensures that no process...

16/3,K/18 (Item 18 from file: 275)

DIALOG(R)File 275:Gale Group Computer DB(TM)

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01244616 SUPPLIER NUMBER: 06692043 (USE FORMAT 7 OR 9 FOR FULL TEXT)

Intel Corporation. (Hardware Review) (one of three PC accelerator board evaluations in 'The souped-up PC') (evaluation)

Hoffman, Thomas V.

PC Tech Journal, v6, n6, p117(2)

June, 1988

DOCUMENT TYPE: evaluation

ISSN: 0738-0194

LANGUAGE: ENGLISH

RECORD TYPE: FULLTEXT; ABSTRACT

WORD COUNT: 608 LINE COUNT: 00047

...ABSTRACT: 386-PC runs in real mode at full speed by default, but cannot access extended memory or **map** the ROMs into 32-bit **RAM** . **Disk** caching software is bundled with the Inboard 386-PC, which exhibited no compatibility problems.

16/3,K/19 (Item 19 from file: 275)

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01152698 SUPPLIER NUMBER: 00594865 (USE FORMAT 7 OR 9 FOR FULL TEXT)

Orchid PCnet.

Webster, R.; Rosch, W.L.

PC Magazine, v4, n3, p229

Feb. 5, 1985

DOCUMENT TYPE: evaluation

ISSN: 0888-8507

LANGUAGE: ENGLISH

RECORD TYPE: FULLTEXT; ABSTRACT

WORD COUNT: 3169 LINE COUNT: 00241

... is to be. You have three practical choices: public read-only, public read-write, and private read- **write** . (Although you can have a private read-only **volume** , that choice is not useful.)

After the various volumes are created, they must be assigned to the workstations that are to use them, a process called "**mapping** ." To the individual user PC, each **volume** appears as a **separate disk drive** with its own, DOS-assigned **drive** letter. These driver letters are then **mapped** to correspond to specific **volumes** on the server PC, using a program called UPCINST. Orchid and Application

PCnet allows individual workstations to...

...most part, running these programs on the network is easy--you need only load them from the **virtual disk** corresponding to the public volume of the server on which they are located. Save for the absence...

16/3,K/20 (Item 20 from file: 275)

DIALOG(R)File 275:Gale Group Computer DB(TM)

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01117904 SUPPLIER NUMBER: 00610307

Review of 'ThunderScan'.

Storrie-Lombardi, L.; Storrie-Lombardi, M.

Call-A.P.P.L.E., v8, n4, p29-30

April, 1985

DOCUMENT TYPE: evaluaton

ISSN: 8755-4909

LANGUAGE: ENGLISH

RECORD TYPE: ABSTRACT

...ABSTRACT: limited print quality and slow speed. These limitations might be overcome with a 512K Mac and a **RAM disk** and-or hard disk. ThunderScan **conforms** very well to the Macintosh conventions. It costs \$229.00.

16/3,K/21 (Item 1 from file: 621)

DIALOG(R)File 621:Gale Group New Prod.Annou.(R)

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01164289 Supplier Number: 42107603 (USE FORMAT 7 FOR FULLTEXT)

SDC INTRODUCES Series 400 CACHING CONTROLLERS

News Release, p1

May 29, 1991

Language: English Record Type: Fulltext

Document Type: Magazine/Journal; Trade

Word Count: 1208

... operating systems. For example, UNIX and Xenix enable SCSI-model users to configure systems in which the **second hard drive** exceeds 504MB -- as long as the first **drive conforms** to WD-1003 **emulation** requirements. Optional drivers, available mid-year, will allow up to seven SCSI devices of 1.8GB each...

...and 4.0,
QNX, PICK and OS/2.

In addition, the Series 400 features as an option **disk mirroring**, which **writes** data concurrently to two paired **drives**. This creates a fault-tolerant, parallel-storage system that protects against critical data loss should one drive...

16/3,K/22 (Item 2 from file: 621)

DIALOG(R)File 621:Gale Group New Prod.Annou.(R)

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01158893 Supplier Number: 41965756 (USE FORMAT 7 FOR FULLTEXT)

Full PC Compatibility in the Palm of your hand! The New Micro Palm PC/3000

News Release, p1

April, 1991

Language: English Record Type: Fulltext

Document Type: Magazine/Journal; Trade

Word Count: 470

... The PC/3000 has 512KB RAM standard and is expandable to a total of 8MB. Users can **map** the available memory to system or **RAM disk** to provide the optimum operatin environment for their application. All memory is non-volatile (supported by a...

16/3,K/23 (Item 3 from file: 621)

DIALOG(R)File 621:Gale Group New Prod.Annou.(R)

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01023323 Supplier Number: 39713897 (USE FORMAT 7 FOR FULLTEXT)

MAXITRON NEW PRODUCT INTRODUCTIONS AT THE APRIL IPC CONFERENCE

PR Newswire, pN/A

March 12, 1986

Language: English Record Type: Fulltext

Document Type: Newswire; Trade

Word Count: 1026

... System, OASIS open
architecture product family, a new MAP module compatible with the MAP
2.1 specification (MAP -001), a Data PC (DPC 67-20), a RAM disk
memory
expansion module (MSM-256), an IBM compatible workstation (T 1607),
enhanced IBM compatible programming software, and...

16/3,K/24 (Item 4 from file: 621)

DIALOG(R)File 621:Gale Group New Prod.Annou.(R)

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01011232 Supplier Number: 39603511 (USE FORMAT 7 FOR FULLTEXT)

TWO DISK SUB-SYSTEMS INTRODUCED BY MDB

PR Newswire, pN/A

Oct, 1985

Language: English Record Type: Fulltext

Document Type: Newswire; Trade

Word Count: 288

... of 188 MBytes. The MLSI-RM11 controller manufactured by
MDB, and supplied with the sub-system allows emulation
of two logical
RM03 drives, thereby providing 134 MBytes total of disk storage
space. The drive has...

...second unit utilizes the Fujitsu M2333K drive that has a data
transfer rate of 2.1 Megabits/ second . Unformatted storage
capacity
of 337 MBytes is mapped to 256 MBytes by use of RM05 emulation
The
MLSI DK11-RM high speed SMD controller provides hardware and software
ECC with vertical or horizontal...
...The DK11
controller also has the provision for direct mapping, in the event
the user wishes to write his own driver and utilize greater disk
storage
capacity. The DK11 disk controller has all parameters of the
controller and disk drive established and/or changed
under software
via the operators console. This unit, designated the MLSI-2333, has
a list price of...

16/3,K/25 (Item 5 from file: 621)

DIALOG(R)File 621:Gale Group New Prod.Annou.(R)

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01003507 Supplier Number: 39527713 (USE FORMAT 7 FOR FULLTEXT)

15MHZ UNIBUS SMD CONTROLLERS INTRODUCED BY MDB SYSTEMS, INC

PR Newswire, pN/A

May 17, 1985

Language: English Record Type: Fulltext

Document Type: Newswire; Trade

Word Count: 561

... used, thereby retaining
software compatibility with DEC systems.

The MDB-DK11-RM provides RM80, RM02, or RM05 emulation modes, and the MDB-DK11-RP provides RP08 emulation, making them transparent to most DEC operating systems...

...and/or emulations.

A key feature of the controllers' capabilities is the method used for drive address mapping. An on-board Disk Address Translator (DAT) provides the method to allow attachment of different configuration SMD disk drives to the controller, without requiring modification of system software drivers or the main controller firmware. The DAT uses a drive attribute pROM and...

...address as supplied by the

RM02/RM05 or Rp08 software drivers to addresses compatible with the attached drive. Either horizontal or vertical mapping may be selected when mapping two logicals per physical drive.

An extended direct disk mapping mode is available for users who wish to use large storage capacity drives (gigabyte capacities) and write their own drivers. This mode allows direct mapping onto the disk where there is a one to one correspondence with cylinder, head, and sector addresses for the software...

16/3,K/26 (Item 1 from file: 636)
DIALOG(R)File 636:Gale Group Newsletter DB(TM)
(c) 2005 The Gale Group. All rts. reserv.

03694348 Supplier Number: 47969818 (USE FORMAT 7 FOR FULLTEXT)
Dataquest: DVD+RW: Sony, Philips, and HP finally make the official announcement
M2 Presswire, pN/A
Sept 10, 1997
Language: English Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 937

... Hitachi Ltd. and Matsushita Electric Industrial Co. (MEI) separately announced plans on April 23 to launch DVD- RAM drives, which conform to that format. Hitachi received much of the credit for facilitating the fusion of the two different...

16/3,K/27 (Item 1 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2005 The Gale Group. All rts. reserv.

07761941 Supplier Number: 64905969 (USE FORMAT 7 FOR FULLTEXT)
TOSHIBA STARTS MASS PRODUCTION OF 16X-SPEED DVD-ROM DRIVE.
AsiaPulse News, p0271
July 19, 2000
Language: English Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 459

... in the DVD field with a constant stream of innovative DVD-Video players, DVD-ROM drives DVD- RAM drives, all in full conformity with DVD-format standards. The addition of the new, high-performance, SD-M1502 DVD-ROM drive to...

16/3,K/28 (Item 2 from file: 16)

DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2005 The Gale Group. All rts. reserv.

05318707 Supplier Number: 48096435 (USE FORMAT 7 FOR FULLTEXT)
First Serving Of Fibre Channel Doesn't Satisfy Storage Performance Appetite
Harvey, David A.
Network Computing, p134
Nov 1, 1997
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 2649

... the hardware RAID's software.
During this process, we discovered an interesting quirk. While hardware RAID controllers **map** an entire array as a single physical **drive**, NT 4.0 **maps** each physical **drive** member of an array as a **separate drive**. This isn't a problem for the vast majority of applications, which read and **write** to **virtual drives**, but beware if you use software that requires access to the physical device itself.
To measure the...

16/3,K/29 (Item 3 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2005 The Gale Group. All rts. reserv.

01749982 Supplier Number: 42192817 (USE FORMAT 7 FOR FULLTEXT)
FRESH TECHNOLOGY
Computer Reseller News, pc12
July 1, 1991
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 763

... Run applications, copy files and edit data on another workstation's drives; hard drives, CD-ROMs, WORMs, **RAM drives** or other local drives can all be shared among **MAP Assist** users; security controls to let users decide which drives they wish to share. Benefits: Transfer data...

16/3,K/30 (Item 1 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)
(c) 2005 ProQuest Info&Learning. All rts. reserv.

02062687 59694025
Where will the intelligence reside in Storage Area Networks?
Smith, Kevin
Computer Technology Review PP: 21-26 Second Quarter 2000
ISSN: 0278-9647 JRNL CODE: CTN
WORD COUNT: 1772

...TEXT: data nearly instantaneously. One approach uses a temporary storage area to save the "before state" of on- **disk** data. Prior to servicing **write** I/Os, the controller copies the "before-state" of **disk** blocks to a temporary storage area. A data structure directs read-only applications such as backup to the online **volume** for blocks that have not been **updated** since the virtual copy was created and to the **temporary storage area** for blocks that have been **updated**. Controller-based **virtual volume** technology eliminates server overhead, dramatically reduces channel and disk utilization, and is server independent.

Shared Access And...

...nodes require simultaneous access to the same stored files.
Shared data clusters use a lock manager to **synchronize** file access. Nodes

acquire locks on **disk** blocks before accessing them. As the number of cluster nodes increase, so do the lock-- related messages...

16/3,K/31 (Item 2 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)
(c) 2005 ProQuest Info&Learning. All rts. reserv.

01494263 01-45251
Virtual organization
Mowshowitz, Abbe
Communications of the ACM v40n9 PP: 30-31+ Sep 1997
ISSN: 0001-0782 JRNL CODE: ACM
WORD COUNT: 4733

...TEXT: in a multitasking or timesharing computer system. The function can be characterized as the satisfaction of dynamically **changing** requirements for **storage** in the machine's primary memory. The requirements are satisfied by switching information between primary and secondary memory. Such switching is based on a conceptual distinction between **virtual storage** and the primary physical storage of the machine, where the former refers to the storage needed by the programs sent to the operating system for execution. **Secondary storage** serves as a physical approximation of unlimited **virtual storage**.

Demand for storage corresponds to the model's abstract requirements, while the physical storage designates concrete satisfiers. Virtual memory works by dynamically **mapping virtual storage**, or requirements, to primary **storage** cells, or satisfiers. In performing this function, the operating system acts as metamanagement. Assignments of physical cells...

16/3,K/32 (Item 3 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)
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00879954 95-29346
PowerBooks: The next generation
Lu, Cary
Macworld v11n7 PP: 96-103 Jul 1994
ISSN: 0741-8647 JRNL CODE: MAW
WORD COUNT: 3619

...TEXT: converts between many common file formats in the DOS/Windows world.

* PowerBook File Assistant, which includes file **synchronization** and a persistent **RAM disk**.

* Control Strip, a new control panel with power-management features (see "Take Control").

* Calendar, a basic calendar...

16/3,K/33 (Item 4 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)
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00848077 94-97469
Making memory go further
Anonymous

Macworld v11n5 PP: 162 May 1994
ISSN: 0741-8647 JRNL CODE: MAW

WORD COUNT: 609

...TEXT: files, so it needs to copy only changed files, which is much faster than copying the entire **RAM disk**. **Synchronizing** also makes it easy to back up while you work, either automatically at preset intervals or manually...

16/3,K/34 (Item 5 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)
(c) 2005 ProQuest Info&Learning. All rts. reserv.

00794504 94-43896
Benchmarking - Part 5
Anonymous
Capacity Management Review v21n11 PP: 5-6 Nov 1993
ISSN: 0091-7206 JRNL CODE: PPR
WORD COUNT: 1172

...TEXT: each "user" level are stored for analysis. The tests fall into four groups:

* Tests 1-5 are **simulated** mixes which are intended to approximate different user profiles, including office automation, data base workload, software development...

...techniques.

* Tests 12-17 perform system calls, function calls, various types of math, context switches, reads and **writes** to pipes, etc.

* Tests 18-30 are focused on **disk** I/O. There are several **different** forms of **disk** I/O tested including raw and UNIX file systems, short and long records, random and sequential access, plus some specialized tests for **disk** cache and "**syncing**" the **disk**.

The report produced for the benchmark results devotes one page to each of the 30 tests, comparing...

16/3,K/35 (Item 1 from file: 647)
DIALOG(R)File 647:CMP Computer Fulltext
(c) 2005 CMP Media, LLC. All rts. reserv.

01144076 CMP ACCESSION NUMBER: NWC19971101S0028
First Serving Of Fibre Channel Doesn't Satisfy Storage Performance Appetite
David A. Harvey
NETWORK COMPUTING, 1997, n 820, PG134
PUBLICATION DATE: 971101
JOURNAL CODE: NWC LANGUAGE: English
RECORD TYPE: Fulltext
SECTION HEADING: Reviews
WORD COUNT: 2646

... the hardware RAID's software.
During this process, we discovered an interesting quirk. While hardware RAID controllers **map** an entire array as a single physical **drive**, NT 4.0 **maps** each physical **drive** member of an array as a **separate drive**. This isn't a problem for the vast majority of applications, which read and **write** to **virtual drives**, but beware if you use software that requires access to the physical device itself.
To measure the...

16/3,K/36 (Item 1 from file: 674)
DIALOG(R)File 674:Computer News Fulltext
(c) 2005 IDG Communications. All rts. reserv.

034985

new products, 2, desktop computing

Journal: Computerworld Page Number: 41

Publication Date: January 17, 1994

Word Count: 858 Line Count: 87

Text:

... file access and extend PowerBook battery life by making better use of Apple Computer, Inc.'s supplied RAM disk .

Features include file **synchronization** , which automatically keeps copies of files on a hard disk and RAM disk, and RAM disk preservation...

Day : Wednesday

Date: 6/8/2005

Time: 11:13:26


PALM INTRANET
Inventor Name Search Result

Your Search was:

Last Name = TRAUT

First Name = ERIC

Application#	Patent#	Status	Date Filed	Title	Inventor Name 39
<u>60508747</u>	Not Issued	159	10/03/2003	SYSTEMS AND METHODS FOR IMPROVING THE X86 ARCHITECTURE FOR PROCESSOR VIRTUALIZATION, AND SOFTWARE SYSTEMS AND METHODS FOR UTILIZING THE IMPROVEMENTS	TRAUT, ERIC
<u>60282111</u>	Not Issued	159	04/07/2001	METHOD FOR ESTABLISHING A DRIVE IMAGE IN A COMPUTING ENVIRONMENT	TRAUT, ERIC P.
<u>11119200</u>	Not Issued	020	04/29/2005	SYSTEMS AND METHODS FOR HYPERVISOR DISCOVERY AND UTILIZATION	TRAUT, ERIC P.
<u>11112273</u>	Not Issued	020	04/21/2005	METHOD AND SYSTEM FOR A RESOURCE NEGOTIATION BETWEEN VIRTUAL MACHINES	TRAUT, ERIC P.
<u>11112234</u>	Not Issued	020	04/21/2005	METHOD AND SYSTEM FOR VIRTUAL SERVICE ISOLATION	TRAUT, ERIC P.
<u>11089951</u>	Not Issued	019	03/25/2005	MECHANISM TO STORE INFORMATION DESCRIBING A VIRTUAL MACHINE IN A VIRTUAL DISK IMAGE	TRAUT, ERIC P.
<u>11078141</u>	Not Issued	020	03/11/2005	SYSTEMS AND METHODS FOR MULTI-LEVEL INTERCEPT PROCESSING IN A VIRTUAL MACHINE ENVIRONMENT	TRAUT, ERIC P.
<u>11075219</u>	Not Issued	020	03/08/2005	METHOD AND SYSTEM FOR A GUEST PHYSICAL ADDRESS VIRTUALIZATION IN A VIRTUAL MACHINE ENVIRONMENT	TRAUT, ERIC

<u>11031158</u>	Not Issued	020	01/07/2005	IMAGE SERVER	TRAUT, ERIC
<u>11031133</u>	Not Issued	020	01/07/2005	IMAGE SERVER	TRAUT, ERIC
<u>11018337</u>	Not Issued	020	12/21/2004	SYSTEMS AND METHODS FOR EXPOSING PROCESSOR TOPOLOGY FOR VIRTUAL MACHINES	TRAUT, ERIC P.
<u>10971948</u>	Not Issued	020	10/22/2004	SYSTEM AND METHOD FOR THE LOGICAL SUBSTITUTION OF PROCESSOR CONTROL IN AN EMULATED COMPUTING ENVIRONMENT	TRAUT, ERIC P.
<u>10971345</u>	Not Issued	020	10/22/2004	SYSTEM AND METHOD FOR THE LOGICAL SUBSTITUTION OF PROCESSOR CONTROL IN AN EMULATED COMPUTING ENVIRONMENT	TRAUT, ERIC P.
<u>10966261</u>	Not Issued	020	10/15/2004	SYSTEMS AND METHODS FOR AUTHORIZING AND ACCESSING COMPUTER-BASED MATERIALS USING VIRTUAL MACHINES	TRAUT, ERIC P.
<u>10966021</u>	Not Issued	020	10/15/2004	SYSTEMS AND METHODS FOR A DISASTER RECOVERY SYSTEM UTILIZING VIRTUAL MACHINES RUNNING ON AT LEAST TWO HOST COMPUTERS IN PHYSICALLY DIFFERENT LOCATIONS	TRAUT, ERIC P.
<u>10883620</u>	Not Issued	020	06/30/2004	SYSTEMS AND METHODS FOR DEVELOPMENT OF EMULATED DEVICES IN A VIRTUAL MACHINE ENVIRONMENT	TRAUT, ERIC P.
<u>10883496</u>	Not Issued	030	06/30/2004	SYSTEMS AND METHODS FOR RUNNING A LEGACY 32-BIT X86 VIRTUAL MACHINE ON A 64-BIT X86 PROCESSOR	TRAUT, ERIC P.
<u>10882979</u>	Not Issued	020	06/30/2004	SYSTEMS AND METHODS FOR IMPLEMENTING AN OPERATING SYSTEM IN A VIRTUAL MACHINE ENVIRONMENT	TRAUT, ERIC P.
<u>10882972</u>	Not Issued	020	06/30/2004	SYSTEMS AND METHODS FOR VOLUNTARY MIGRATION OF A VIRTUAL MACHINE	TRAUT, ERIC P.

				BETWEEN HOSTS WITH COMMON STORAGE CONNECTIVITY	
<u>10882967</u>	Not Issued	020	06/30/2004	SYSTEMS AND METHODS FOR INITIALIZING MULTIPLE VIRTUAL PROCESSORS WITHIN A SINGLE VIRTUAL MACHINE	TRAUT, ERIC P.
<u>10882891</u>	Not Issued	030	06/30/2004	SYSTEMS AND METHODS FOR INSTRUCTION SEQUENCE COMPOUNDING IN A VIRTUAL MACHINE ENVIRONMENT	TRAUT, ERIC P.
<u>10857702</u>	Not Issued	030	05/28/2004	SYSTEMS AND METHODS FOR IMPROVING THE X86 ARCHITECTURE FOR PROCESSOR VIRTUALIZATION, AND SOFTWARE SYSTEMS AND METHODS FOR UTILIZING THE IMPROVEMENTS	TRAUT, ERIC P.
<u>10794898</u>	Not Issued	030	03/05/2004	SYSTEMS AND METHODS FOR DATA ENCRYPTION USING PLUGINS WITHIN VIRTUAL SYSTEMS AND SUBSYSTEMS	TRAUT, ERIC P.
<u>10734450</u>	Not Issued	020	12/12/2003	SYSTEMS AND METHODS FOR BIMODAL DEVICE VIRTUALIZATION OF ACTUAL AND IDEALIZED HARDWARE-BASED DEVICES	TRAUT, ERIC
<u>10685051</u>	Not Issued	030	10/14/2003	SYSTEMS AND METHODS FOR USING SYNTHETIC INSTRUCTIONS IN A VIRTUAL MACHINE	TRAUT, ERIC
<u>10274298</u>	Not Issued	030	10/18/2002	SOFTWARE LICENSE ENFORCEMENT MECHANISM FOR AN EMULATED COMPUTING ENVIRONMENT	TRAUT, ERIC P.
<u>10211148</u>	Not Issued	030	08/02/2002	METHOD FOR MONITORING AND EMULATING PRIVILEGED INSTRUCTIONS OF PROGRAMS IN A VIRTUAL MACHINE	TRAUT, ERIC P.
<u>10193531</u>	Not Issued	030	07/11/2002	METHOD FOR FORKING OR MIGRATING A VIRTUAL MACHINE	TRAUT, ERIC P.

<u>09918295</u>	Not Issued	071	07/30/2001	METHOD FOR ESTABLISHING A VIRTUAL HARD DRIVE FOR AN EMULATED COMPUTER SYSTEM RUNNING ON A HOST COMPUTER SYSTEM	TRAUT, ERIC P.
<u>09906392</u>	Not Issued	061	07/16/2001	SYSTEM AND METHOD FOR THE LOGICAL SUBSTITUTION OF PROCESSOR CONTROL IN AN EMULATED COMPUTING ENVIRONMENT	TRAUT, ERIC P.
<u>09809731</u>	Not Issued	061	03/15/2001	METHOD FOR HYBRID PROCESSING OF SOFTWARE INSTRUCTIONS OF AN EMULATED COMPUTER SYSTEM	TRAUT, ERIC P.
<u>09747492</u>	Not Issued	094	12/21/2000	SYSTEM AND METHOD FOR THE LOGICAL SUBSTITUTION OF PROCESSOR CONTROL IN AN EMULATED COMPUTING ENVIRONMENT	TRAUT, ERIC P.
<u>09617709</u>	<u>6651132</u>	150	07/17/2000	SYSTEM AND METHOD FOR EMULATING THE OPERATION OF A TRANSLATION LOOK- ASIDE BUFFER	TRAUT, ERIC P.
<u>09617669</u>	Not Issued	071	07/17/2000	SYSTEM AND METHOD FOR DISPLAYING CURRENT IMAGES OF VIRTUAL MACHINE ENVIRONMENTS	TRAUT, ERIC P.
<u>08906375</u>	<u>5790825</u>	150	08/05/1997	METHOD FOR EMULATING GUEST INSTRUCTIONS ON A HOST COMPUTER THROUGH DYNAMIC RECOMPILATION OF HOST INSTRUCTIONS	TRAUT, ERIC P.
<u>08555166</u>	Not Issued	166	11/08/1995	METHOD FOR EMULATING GUEST INSTRUCTIONS ON A HOST COMPUTER THROUGH DYNAMIC RECOMPILATION OF HOST INSTRUCTIONS	TRAUT, ERIC P.
<u>08409477</u>	<u>6256658</u>	150	03/22/1995	APPARATUS FOR EXECUTING A PLURALITY OF PROGRAM SEGMENTS HAVING DIFFERENT OBJECT CODE TYPES IN A SINGLE PROGRAM OR PROCESSOR ENVIRONMENT	TRAUT, ERIC P.
<u>07993923</u>	<u>5452456</u>	150	12/18/1992	APPARATUS FOR EXECUTING A PLURALITY OF PROGRAM	TRAUT, ERIC P.

				SEGMENTS HAVING DIFFERENT OBJECT CODE TYPES IN A SINGLE PROGRAM OR PROCESSOR ENVIRONMENT	
--	--	--	--	--	--

Inventor Search Completed: No Records to Display.

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PALM INTRANET
Inventor Name Search Result

Your Search was:

Last Name = GILES

First Name = AARON

Application#	Patent#	Status	Date Filed	Title	Inventor Name 7
<u>60282111</u>	Not Issued	159	04/07/2001	METHOD FOR ESTABLISHING A DRIVE IMAGE IN A COMPUTING ENVIRONMENT	GILES, AARON
<u>10794898</u>	Not Issued	030	03/05/2004	SYSTEMS AND METHODS FOR DATA ENCRYPTION USING PLUGINS WITHIN VIRTUAL SYSTEMS AND SUBSYSTEMS	GILES, AARON
<u>09918295</u>	Not Issued	071	07/30/2001	METHOD FOR ESTABLISHING A VIRTUAL HARD DRIVE FOR AN EMULATED COMPUTER SYSTEM RUNNING ON A HOST COMPUTER SYSTEM	GILES, AARON S.
<u>09809731</u>	Not Issued	061	03/15/2001	METHOD FOR HYBRID PROCESSING OF SOFTWARE INSTRUCTIONS OF AN EMULATED COMPUTER SYSTEM	GILES, AARON
<u>09617624</u>	Not Issued	071	07/17/2000	SYSTEM AND METHOD FOR EMULATING THE OPERATION OF A VIDEO GRAPHICS ADAPTER	GILES, AARON
<u>09222461</u>	<u>6115054</u>	150	12/29/1998	GRAPHICS PROCESSOR EMULATION SYSTEM AND METHOD WITH ADAPTIVE FRAME SKIPPING TO MAINTAIN SYNCHRONIZATION BETWEEN EMULATION TIME AND REAL TIME	GILES, AARON S.

Inventor Search Completed: No Records to Display.

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PALM INTRANET
Inventor Name Search Result

Your Search was:

Last Name = CHAKRABORTY

First Name = PARAG

Application#	Patent#	Status	Date Filed	Title	Inventor Name 5
<u>60282111</u>	Not Issued	159	04/07/2001	METHOD FOR ESTABLISHING A DRIVE IMAGE IN A COMPUTING ENVIRONMENT	CHAKRABORTY, PARAG
<u>11112273</u>	Not Issued	020	04/21/2005	METHOD AND SYSTEM FOR A RESOURCE NEGOTIATION BETWEEN VIRTUAL MACHINES	CHAKRABORTY, PARAG
<u>11089951</u>	Not Issued	019	03/25/2005	MECHANISM TO STORE INFORMATION DESCRIBING A VIRTUAL MACHINE IN A VIRTUAL DISK IMAGE	CHAKRABORTY, PARAG
<u>09918295</u>	Not Issued	071	07/30/2001	METHOD FOR ESTABLISHING A VIRTUAL HARD DRIVE FOR AN EMULATED COMPUTER SYSTEM RUNNING ON A HOST COMPUTER SYSTEM	CHAKRABORTY, PARAG

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